Service Manual

ORDER NO.
RRV2117

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-21

● Refer to the service manual RRV2104 for VSX-D608/KUXJI.

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	VSX-21		
KUXJI/CA	◯	AC120V	

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE, INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V. Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
©PIONEER ELECTRONIC CORPORATION 1999

T – ZZK APR. 1999 Printed in Japan

1. CONTRAST OF MISCELLANEOUS PARTS

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *Screws adjacent to ▼ mark on product are used for disassembly.*
● *Reference Nos. indicate the pages and Nos. in the service manual for the base model.*
● *When ordering resistors, first convert resistance values into code form as shown in the following examples.*
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 → 56 x 10^1 → 561 ····· RD1/4PU 5 6 1 J
47k → 47 x 10^3 → 473 ····· RD1/4PU 4 7 3 J
0.5 → R50 ····· RN2H R 5 0 K
1 → 1R0 ····· RS1P 1 R 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k → 562 x 10^1 → 5621 ····· RN1/4PC 5 6 2 1 F

■ CONTRAST TABLE

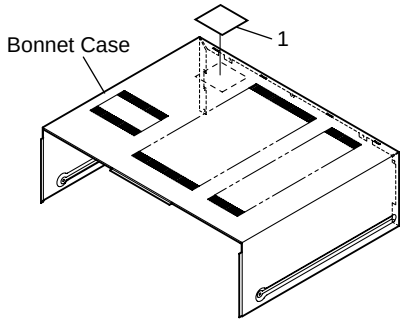
VSX-21/KUXJI/CA and VSX-D608/KUXJI are constructed the same except for the following :

Ref. No.	Mark	Symbol and Description	Part No.		Remarks
			VSX-D608 /KUXJI	VSX-21 /KUXJI/CA	
		ASSEMBLIES			
	NSP	INPUT Assy	AWK7472	AWK7504	
P5- 2		├ FRONT Assy	AWX7215	AWX7335	
P5- 4	NSP	└ REAR SP Assy	AWX7250	Not used	
	NSP	AMP Assy	AWK7480	AWK7505	
P5- 5		└ AMP Assy	AWX7223	AWX7336	
	NSP	EXCELLENT Assy	AWK7485	AWK7503	
P5- 4		├ REAR SP Assy	Not used	AWX7338	
P5-16		└ FRONT LARGE Assy	AWX7288	AWX7337	
		PACKING			
P3- 3		Operating Instructions (English)	ARB7157	ARB7181	
P3- 7	NSP	Warranty Card	ARY7023	ARY7007	
P3-13		Packing Case	AHD7692	AHD7700	
		EXTERIOR SECTION			
P5-18	⚠	Power Transformer (T1)	ATS7234	ATS7235	
P5-31		Rear Panel	ANC7724	ANC7769	
P5-46		Display Window	AAK7606	AAK7632	
P5-47		Front Panel	AMB7552	AMB7585	
P5-70		Insulator	AMR7198	PNW2766	
P5-71	⚠	Fuse (FU701: 10A)	Not used	REK1087	Refer to KCXJI type
		DOC Label	Not used	VRW1726	No.1

Notes: ● The numbers in the remarks column correspond to the numbers on "EXPLODED VIEWS".
● For ASSEMBLIES, refer to “CONTRAST OF PCB ASSEMBLIES”, “2. SCHEMATIC DIAGRAM” and “3. PCB CONNECTION DIAGRAM”.

■ EXPLODED VIEWS

● EXTERIOR SECTION



■ CONTRAST OF PCB ASSEMBLIES

BF FRONT ASSY

AWX7335 and AWX7215 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		AWX7215	AWX7335	
	D222, D223	Not used	1SS355	
	S215	Not used	ASG1034	

DF AMP ASSY

AWX7336 and AWX7223 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		AWX7223	AWX7336	
	C1432, C1433	CFTYA104J50	Not used	
⚠	R1436, R1437	RS1LMF4R7J	Not used	
	H751, H752	Not used	AKR1004	*

* : Refer to VSX-D608/KCXJI in the service manual RRV2104.

GF FRONT LARGE ASSY

AWX7337 and AWX7288 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		AWX7288	AWX7337	
	R633, R634	Not used	RD1/4PU223J	
	R635, R636	Not used	RD1/4PU122J	
	CN628	Not used	AKB7001	
	631 PCB BINDER	Not used	VEF1040	

■ PCB PARTS LIST

Mark	No.	Description	Part No.

HF REAR SP ASSY

SEMICONDUCTORS

	Q652		2SC1740S
	Q651		KRA101M
	D651, D652		1SS133

COIL

	L651	AF CHOKE COIL	ATH1004

RELAYS

⚠	RY651, RY652		ASR7001

CAPACITOR

	C651, C657, C658		CFTYA104J50

Mark	No.	Description	Part No.

RESISTORS

⚠	R652		RD1/4LMF4R7J
	R655, R661, R662		RD1/4PU122J
	R653, R654, R656, R663, R664		RD1/4PU223J
⚠	R657–R659		RS1LMF4R7J
⚠	R651		RS2LMF271J
	Other Resistors		RS1/10S□□□J

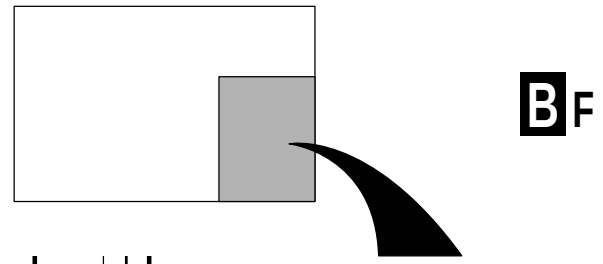
OTHERS

	JA653	3P PIN JACK	AKB7101
	CN652	SPEAKER TERMINAL 6P	AKE7037
	CN651	12P PLUG	AKM7007

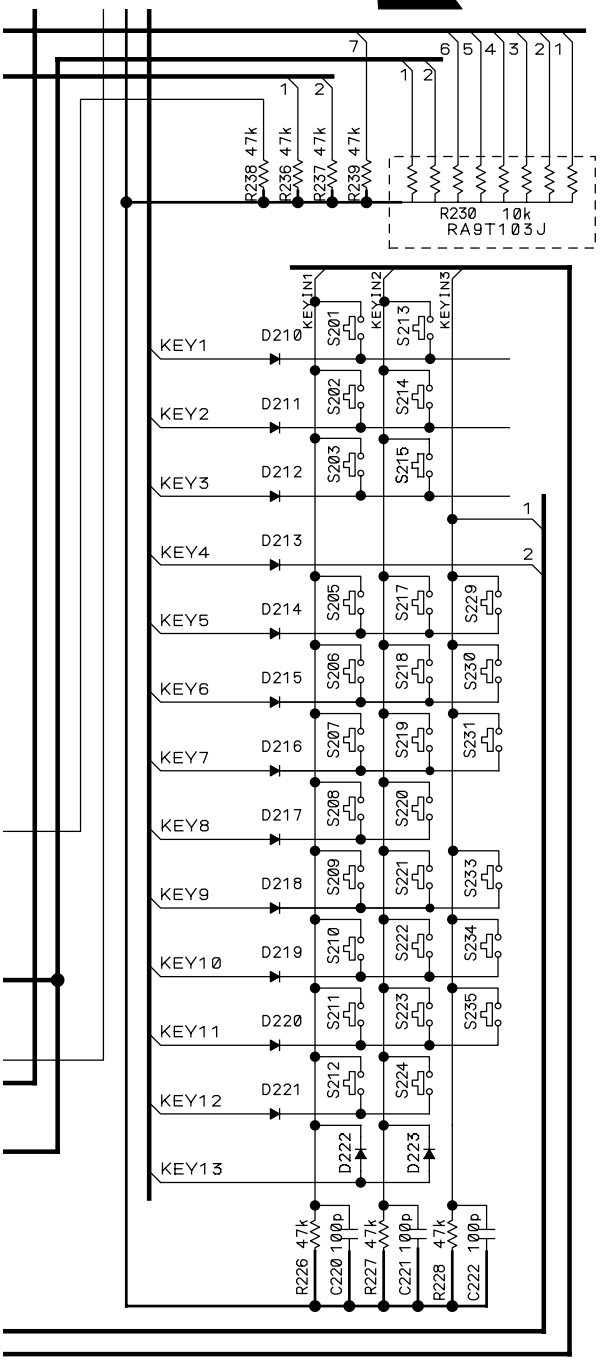
2. SCHEMATIC DIAGRAM

Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST"

2.1 FRONT ASSY



BF FRONT ASSY
(AWX7335)

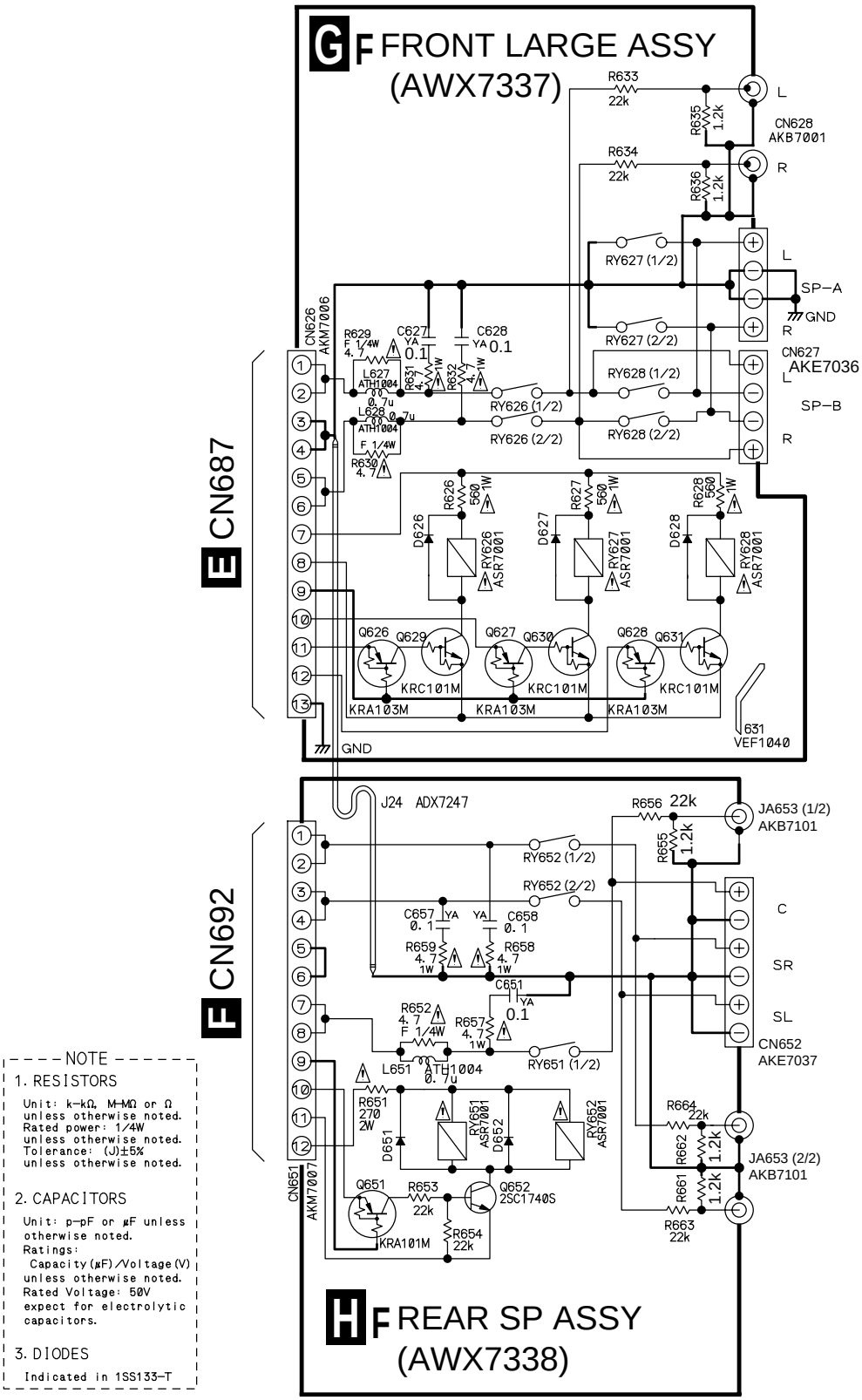


FRONT ASSY
S201 : SIGNAL SELECT
S202 : MIDNIGHT
S203 : DIGITAL NR
S205 : – ┐
S206 : + ┘ BASS
S207 : – ┐
S208 : + ┘ TREBLE
S209 : SPEAKERS
S210 : LOUDNESS
S211 : DIRECT
S212 : TAPE2 MONITOR
S213 : □□ / DTS
S214 : DSP MODE
S215 : RE-EQ
S217 : DVD/LD
S218 : TV/SAT
S219 : CD
S220 : FM/AM
S221 : VCR 1
S222 : VCR 2
S223 : MD/TAPE1
S224 : VIDEO
S229 : CLASS
S230 : MEMORY
S231 : MPX MODE
S233 : – ┐
S234 : + ┘ STATION/FREQUENCY
S235 : TUNING SELECT
S250 : MASTER VOLUME

NOTE

1. RESISTORS
   Unit: k—kΩ, M—MΩ or Ω unless otherwise noted.
   Rated power: 1/10W unless otherwise noted.
   Tolerance: (J)±5% unless otherwise noted.
2. CAPACITORS
   Unit: p—pF or μF unless otherwise noted.
   Ratings: Capacity(μF)/Voltage(V) unless otherwise noted.
   Rated Voltage: 50V expect for electrolytic capacitors.
   JA:CEJA
3. DIODES
   Indicated in 1SS355-TRB.

2.2 FRONT LARGE and REAR SP ASSEMBLIES



3. PCB CONNECTION DIAGRAM

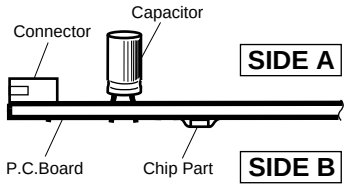
NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

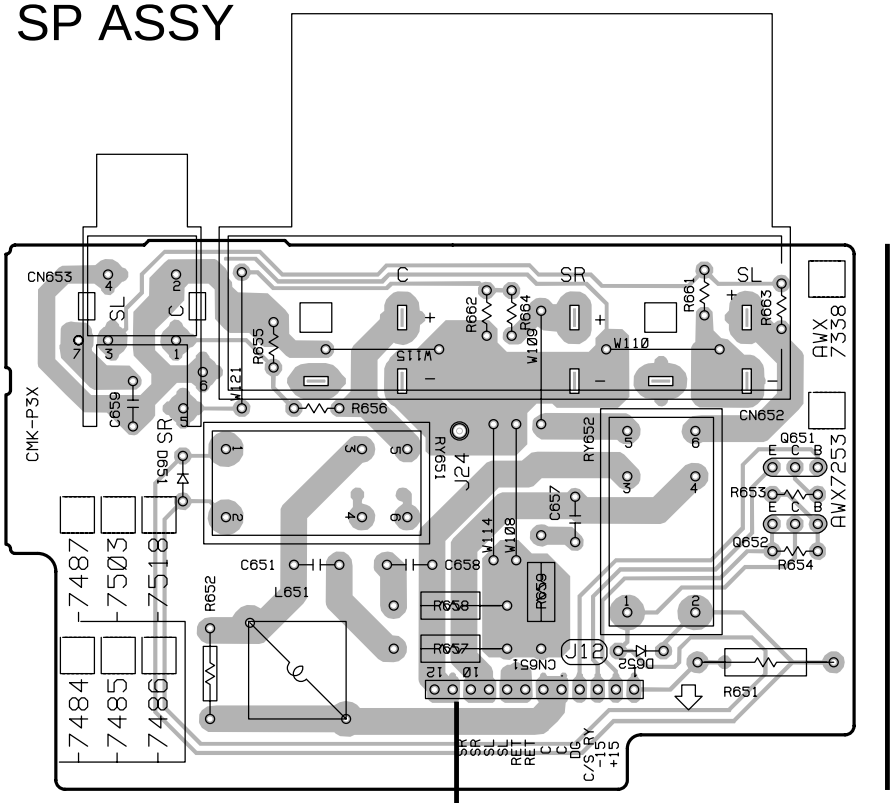
3. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.

4. Viewpoint of PCB diagrams



3.1 REAR SP ASSY

HF REAR SP ASSY



Q651

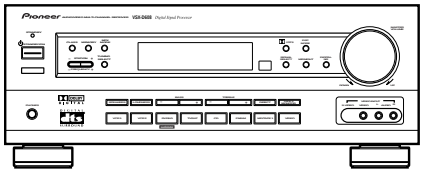
Q652

(ANP7268-B)

SIDE A

F CN692

Service Manual



ORDER NO.
RRV2104

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-D608

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	VSX-D608		
KUXJI	◯	AC120V	
KCXJI	◯	AC120V	

CONTENTS

1. SAFETY INFORMATION ····· 2
2. EXPLODED VIEWS AND PARTS LIST ····· 3
3. SCHEMATIC DIAGRAM ····· 6
4. PCB CONNECTION DIAGRAM ····· 26
5. PCB PARTS LIST ····· 39
6. ADJUSTMENT ····· 44
7. GENERAL INFORMATION ····· 45
   7.1 PARTS ····· 45
      7.1.1 IC ····· 45
      7.1.2 DISPLAY ····· 48
   7.2 DISASSEMBLY ····· 50
   7.3 BLOCK DIAGRAM ····· 52
   7.4 REMOTE CONTROL UNIT ····· 53
      [CU-VSX138 (AXD7178)]
8. PANEL FACILITIES AND SPECIFICATIONS ···· 57

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE, INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V. Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

©PIONEER ELECTRONIC CORPORATION 1999

T – IZK FEB. 1999 Printed in Japan

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

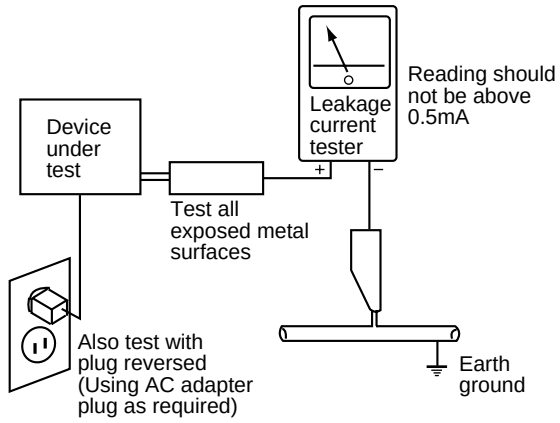
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
+
–
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

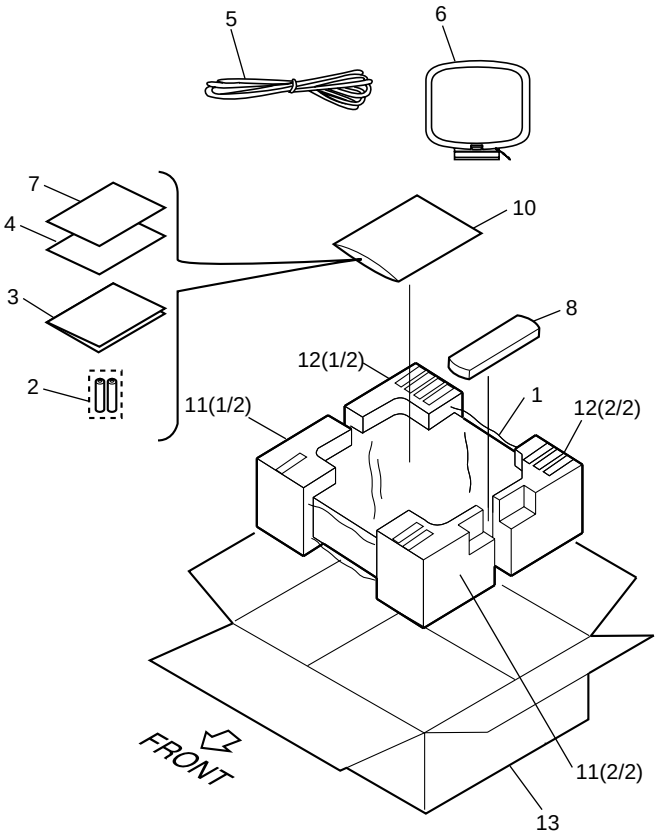
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *Screws adjacent to ▼ mark on the product are used for disassembly.*

2.1 PACKING



(1) PACKING PARTS LIST

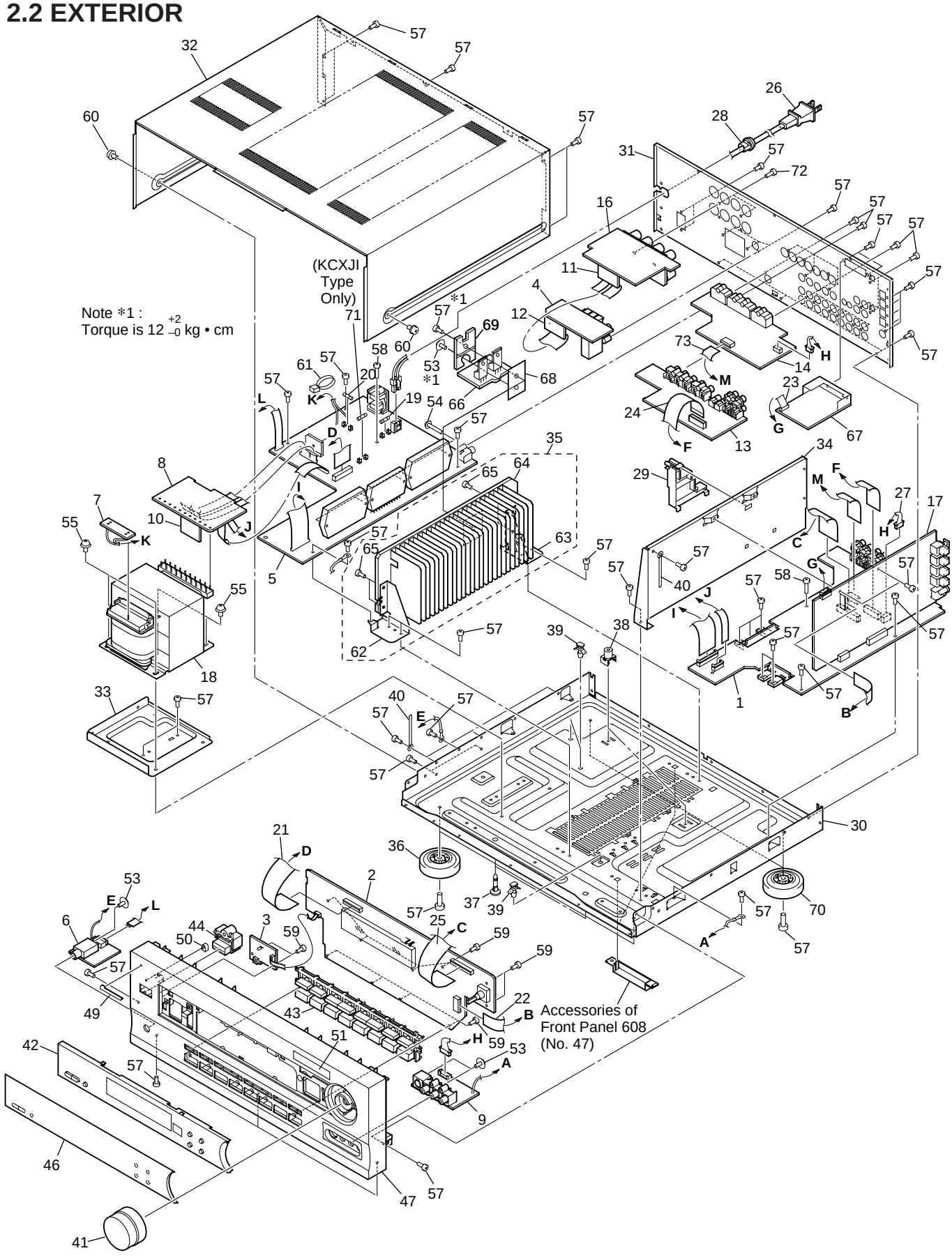
Mark	No.	Description	Part No.
	1	Packing Sheet	AHG7010
NSP	2	Alkaline Dry Cell Battery (LR6, AA)	VEM1012
	3	Operating Instructions	See Contrast table (2)
	4	Sub Instruction Manual (System Set Up)	ARH7048
	5	FM Antenna	ADH7004
	6	AM Loop Antenna	ATB7009
NSP	7	Warranty Card	See Contrast table (2)
	8	Remote Control Unit (CU-VSX138)	AXD7178
	9	•••••	
	10	Polyethylene Bag (0.03×230×340)	Z21-038
	11	Front Pad 508	AHA7236
	12	Rear Pad 508	AHA7237
	13	Packing Case 608UC	AHD7692

(2) CONTRAST TABLE

VSX-D608/KUXJI and KCXJI are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			KUXJI Type	KCXJI Type	
	3	Operating Instructions (English)	ARB7157	Not used	
	3	Operating Instructions (English/French)	Not used	ARE7179	
NSP	7	WarrantyCard	ARY7023	ARY7024	

2.2 EXTERIOR


Note *1 :
Torque is 12 +2 −0 kg • cm
(KCXJI Type Only)
Accessories of Front Panel 608 (No. 47)

(1) EXTERIOR PARTS LIST

Mark	No.	Description	Part No.
	1	INPUT Assy	AWX7209
	2	FRONT Assy	AWX7215
NSP	3	POWER SW Assy	AWX7222
NSP	4	REAR SP Assy	AWX7250
	5	AMP Assy	See Contrast table (2)
NSP	6	HEADPHONE Assy	AWX7229
	7	TRANS 1 Assy	AWX7231
	8	TRANS 2 Assy	AWX7232
NSP	9	FRONT VIDEO Assy	AWX7371
	10	BARRIER Assy	AWX7284
NSP	11	F.SP.CONNECT Assy	AWX7285
NSP	12	R.C.SP.CONNECT Assy	AWX7286
	13	VIDEO Assy	AWX7235
	14	SVIDEO Assy	AWX7237
	15	• • • • •	
	16	FRONT LARGE Assy	AWX7288
	17	DOLBY DIGITAL Assy	AWX7373
⚠	18	Power Transformer (T1)	See Contrast table (2)
⚠	19	Fuse (FU1 : 10A)	REK1087
⚠	20	Fuse (FU2 : 7A)	VEK1027
	21	FFC 21P (J2)	ADD7100
	22	FFC 07P (J4)	ADD7101
	23	FFC 13P (J5)	ADD7103
	24	FFC 17P (J8)	ADD7107
	25	FFC 26P (J3)	ADD7118
⚠	26	AC Power Cord	ADG7024
NSP	27	8P Shield Cable (J6)	ADX7243
	28	Cord Stopper	CM-22C
	29	Tuner Holder B	AAD7490
NSP	30	Under Base D5	ANA7079
	31	Rear Panel	See Contrast table (2)
	32	Bonnet Case	AZN7762
	33	Trans Frame	ANG7193
	34	DSP Shield	ANG7196
NSP	35	Heat Sink Assy D5	ANH7095
	36	Insulator	PNW2766
	37	Locking Card Spacer	AEC7160
	38	PCB Mold	AMR2533
NSP	39	Card Spacer	DEC1770
NSP	40	Binder	RNE1277
	41	Volume Knob 508	AAB7179
	42	Sub Panel 508	AAD7482
	43	Function Button 608	AAD7500
	44	Power Button	AAD7440
	45	• • • • •	
	46	Display Window R608	AAK7606
	47	Front Panel 608	AMB7552
	48	• • • • •	
	49	Name Plate	PAM1776
	50	LED Lens	PNW2019
	51	• • • • •	
	52	• • • • •	
	53	Screw	ABA7009
	54	Screw	ABA7043
	55	Screw	ABA7044
	56	• • • • •	
	57	Screw	BBZ30P080FZK
	58	Screw	BBZ30P200FMC
	59	Screw	BPZ30P080FMC
	60	Screw	FBT40P080FZK
NSP	61	Binder (BK-1)	ZCA-BK1
	62	Heat Sink Angle F	ANG7194
	63	Heat Sink Angle R	ANG7195
NSP	64	Heat Sink D5	ANH7090
	65	Screw	BBZ30P080FMC
NSP	66	FET Assy	AWX7228
	67	FM/AM TUNER Unit	AXX7046
	68	Sheet	AEE7026
	69	FET Angle	ANG7186
	70	Insulator	AMR7198
⚠	71	Fuse (FU701 : 10A)	See Contrast table (2)
	72	Screw	ABA1007
	73	FFC 11P (J7)	ADD7142

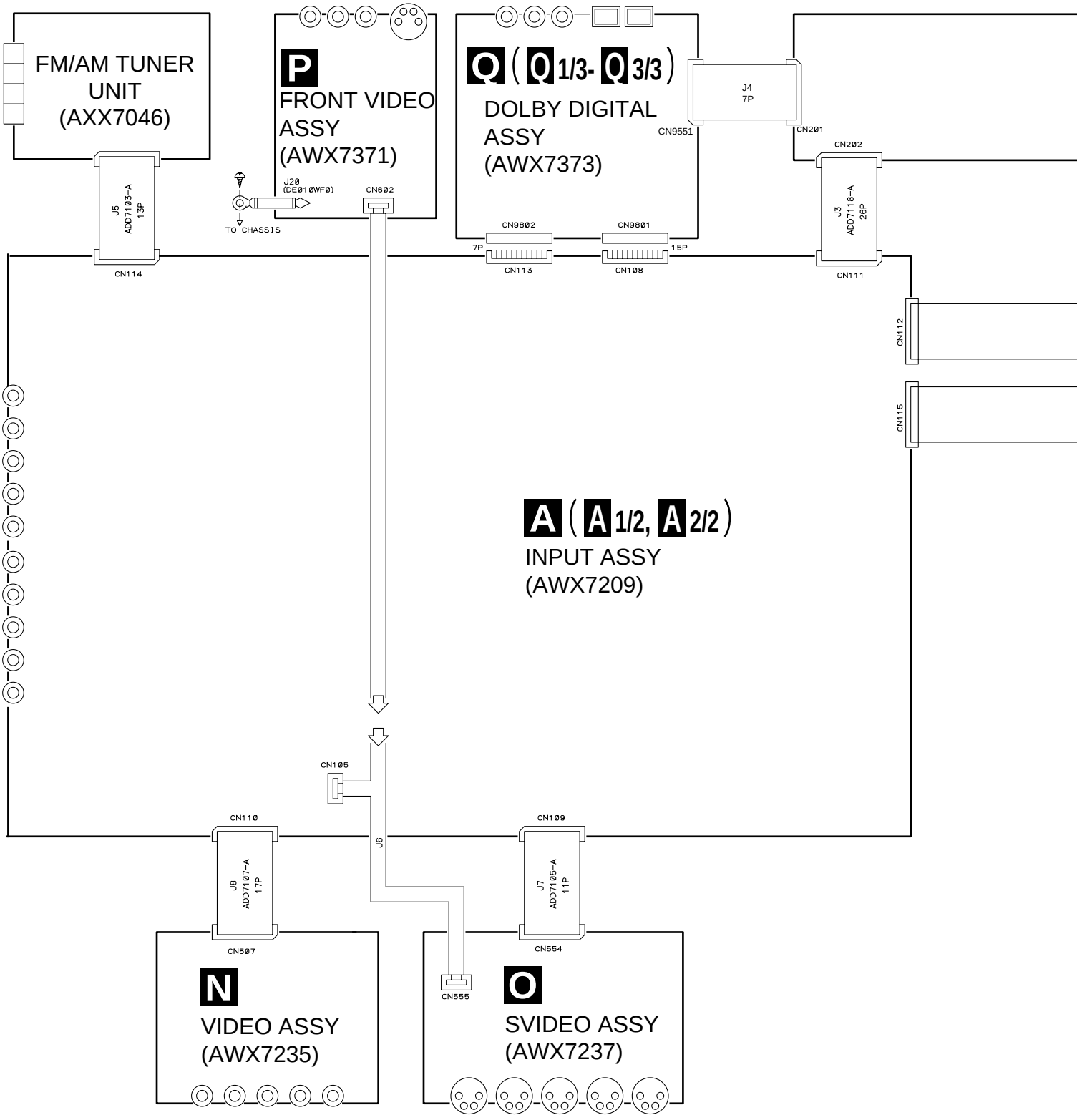
(2) CONTRAST TABLE

VSX-D608/KUXJI and KCXJI are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			KUXJI Type	KCXJI Type	
	5	AMP Assy	AWX7223	AWX7331	
⚠	18	Power Transformer (T1)	ATS7234	ATS7235	
	31	Rear Panel 608U	ANC7724	Not used	
	31	Rear Panel 608C	Not used	ANC7763	
⚠	71	Fuse (FU701 : 10A)	Not used	REK1087	

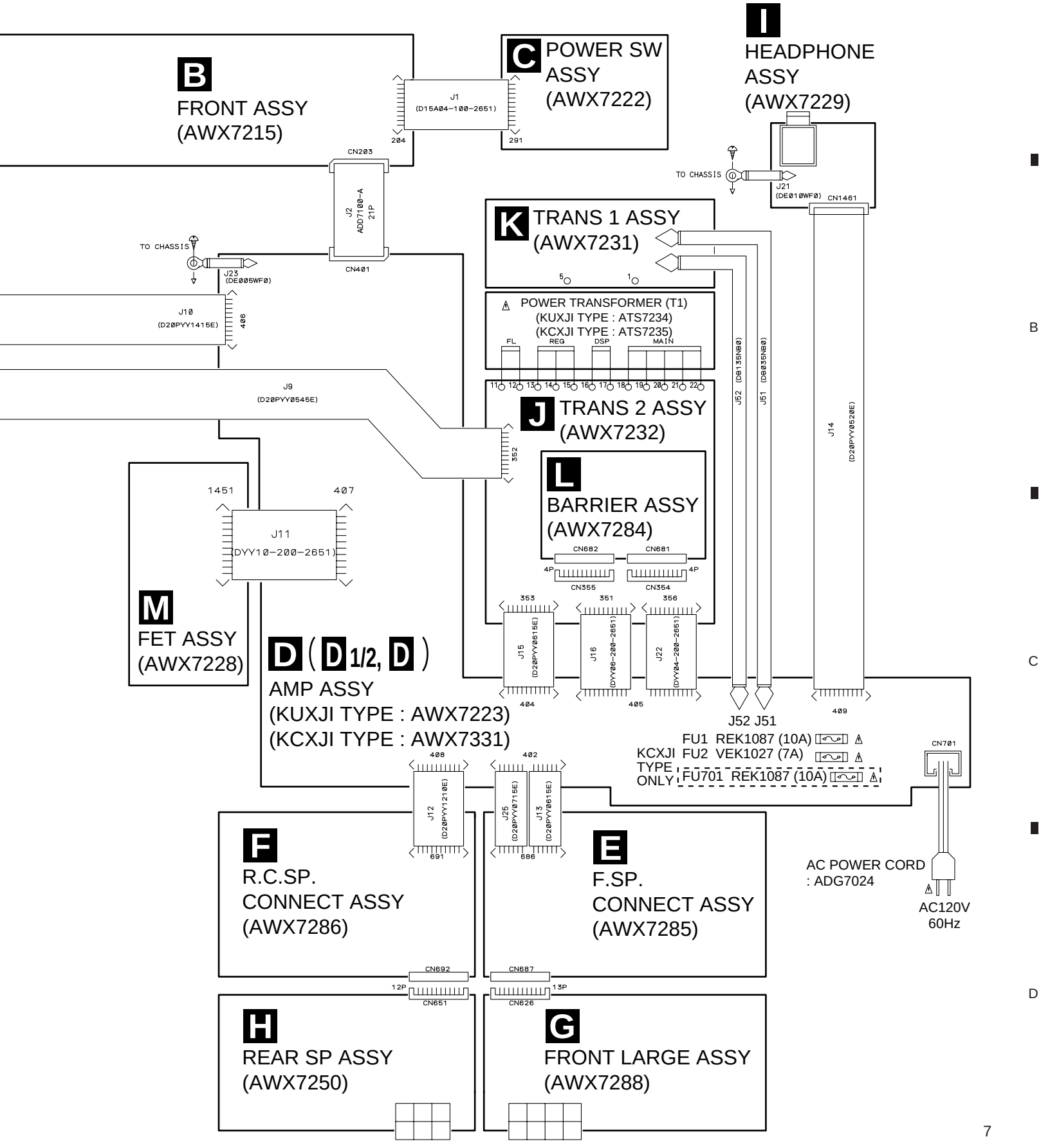
3. SCHEMATIC DIAGRAM

3.1 OVERALL WIRING CONNECTION DIAGRAM

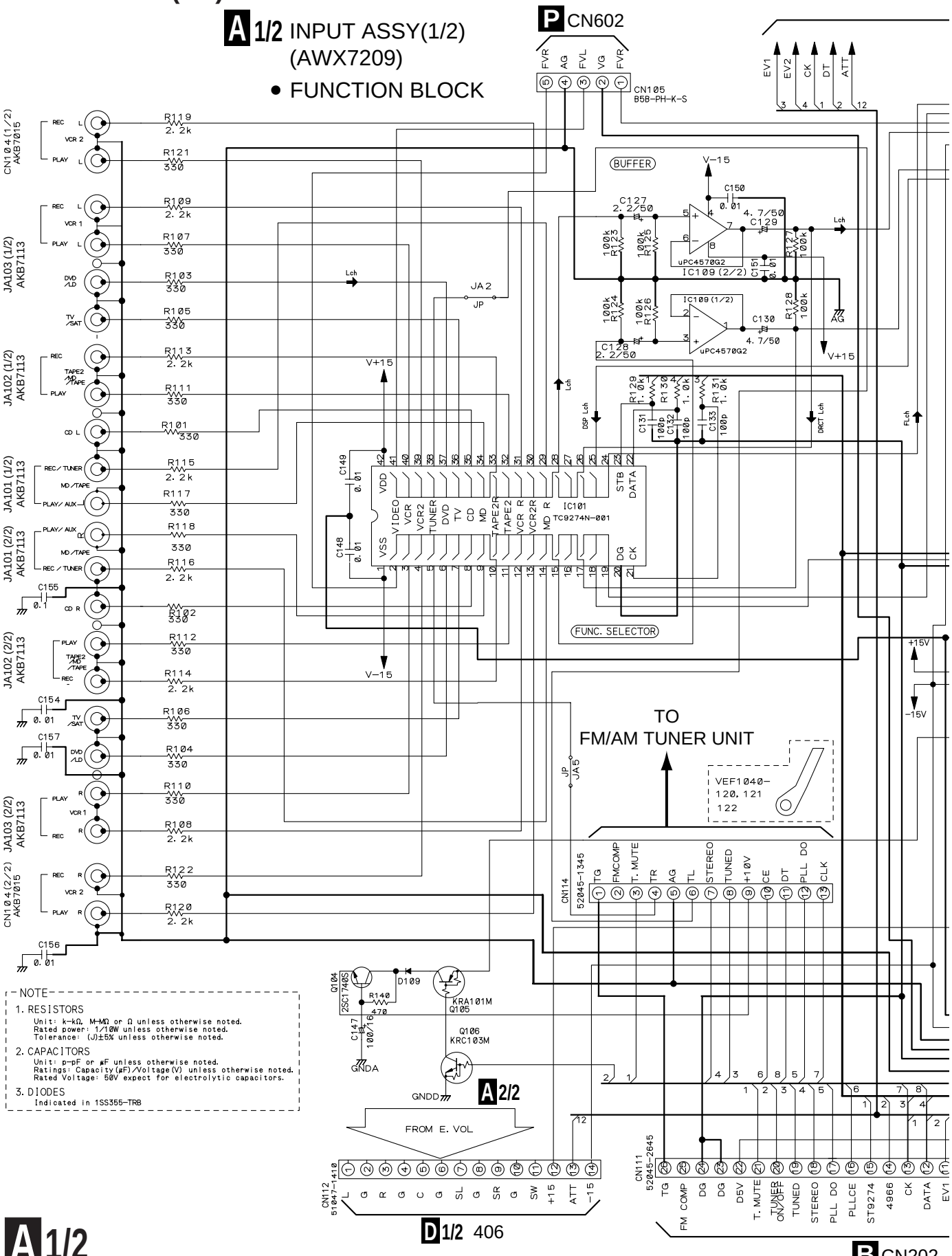


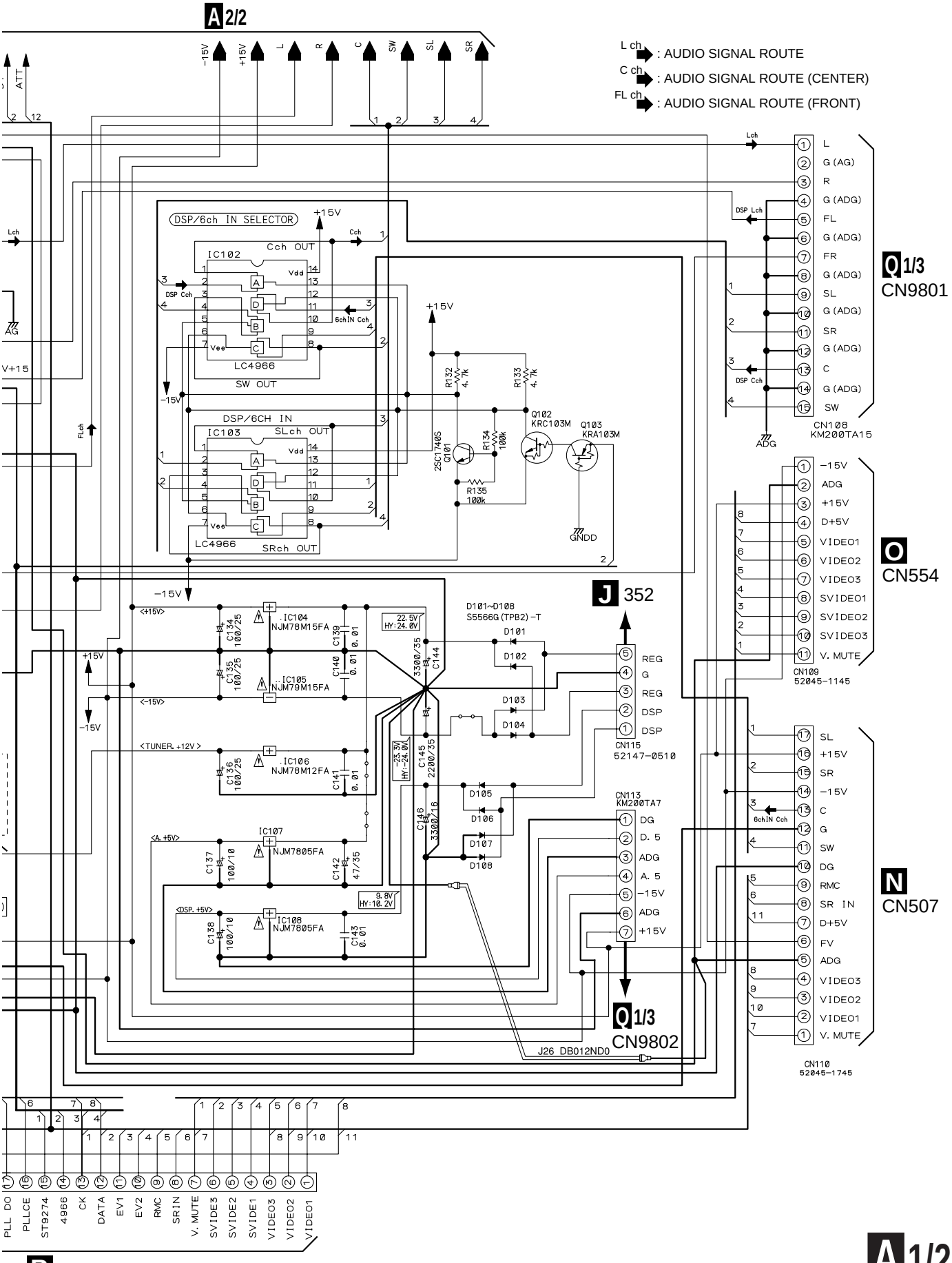
BORD IN CABLE	PCB–PCB CONNECTOR	F/F/C AND CONNECTOR	F/C AND CONNECTOR	F/C AND CABLEHOLDER	SHIELDCABLE AND CONNECTOR	AC CODE AND CONNECTOR

Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".



3.2 INPUT ASSY (1/2)

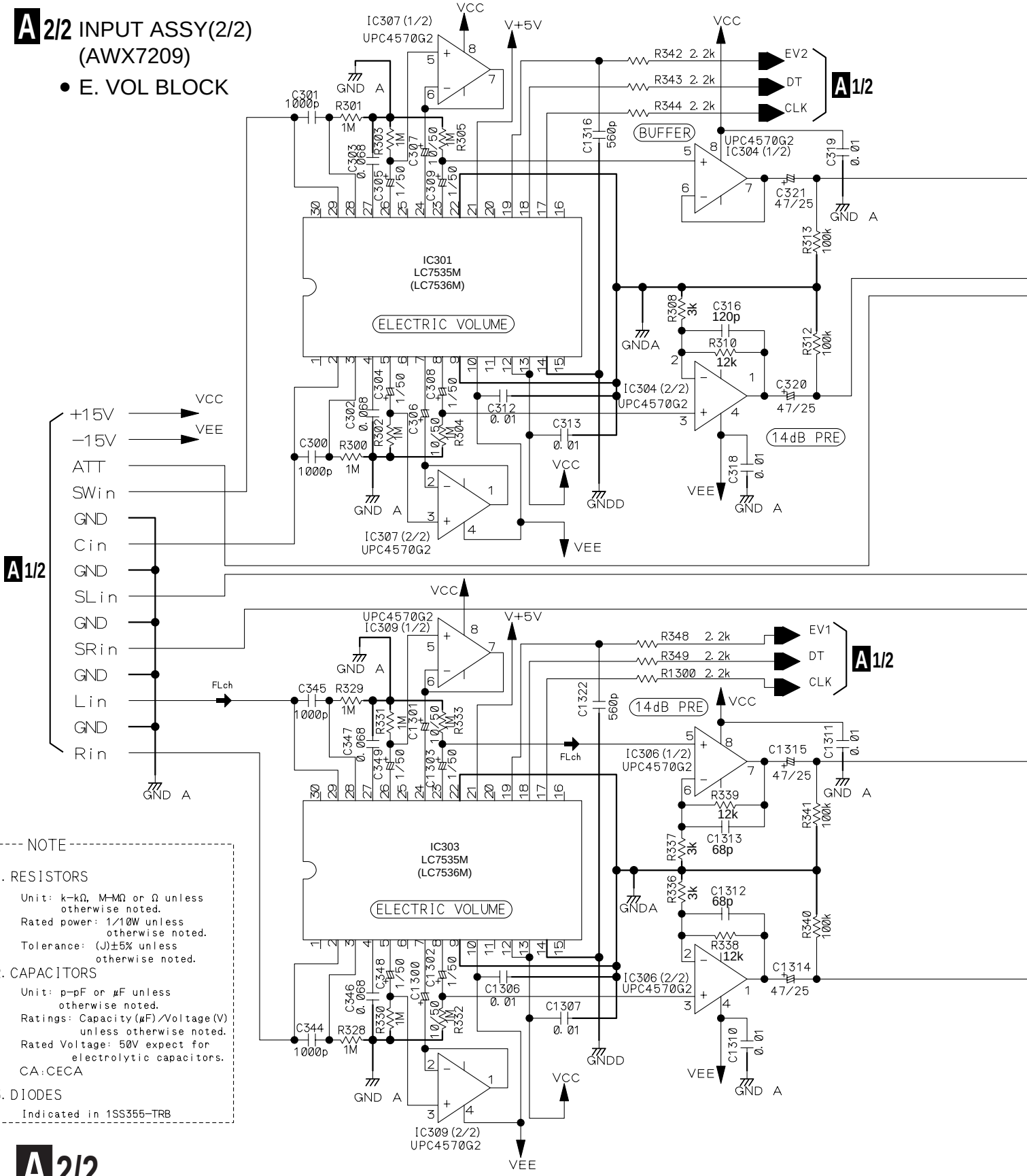



A 2/2
L ch : AUDIO SIGNAL ROUTE
C ch : AUDIO SIGNAL ROUTE (CENTER)
FL ch : AUDIO SIGNAL ROUTE (FRONT)
DSP/6ch IN SELECTOR
IC102
Cch OUT
LC4966
SW OUT
DSP/6CH IN
IC103
SLch OUT
SRch OUT
Q102 KRC103M
Q103 KRA103M
2SC1740S Q101
IC104 NJM78M15FA
IC105 NJM79M15FA
IC106 NJM78M12FA
IC107 NJM7805FA
IC108 NJM7805FA
D101~D108 S5566G (TPB2) -T
J 352
CN115 52147-0510
CN113 KM200TA7
Q 1/3 CN9802
J26 DB012ND0
Q 1/3 CN9801
CN108 KM200TA15
O CN554
CN109 52045-1145
N CN507
CN110 52045-1745
B CN202
A 1/2

3.3 INPUT ASSY (2/2)

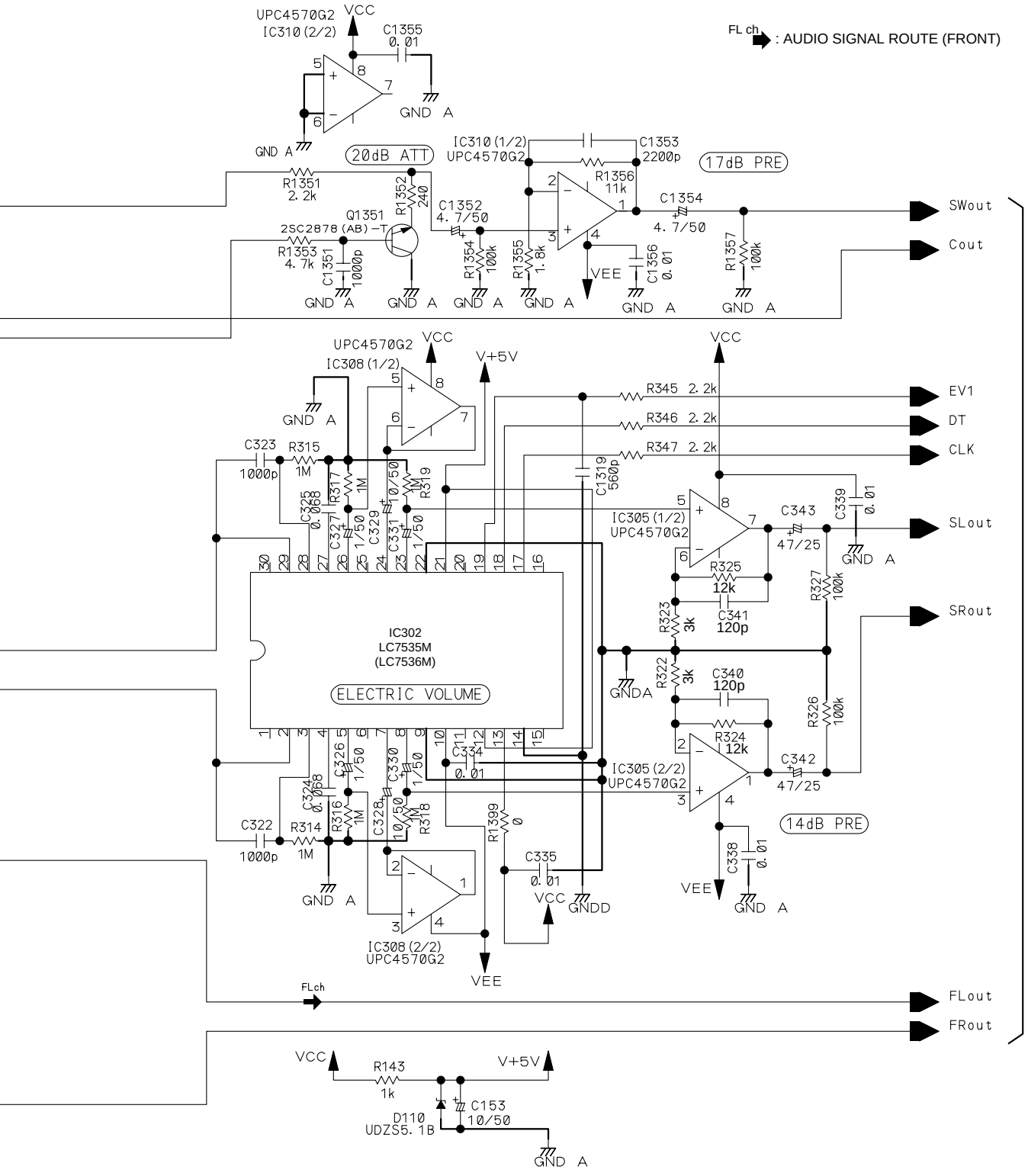
A 2/2 INPUT ASSY(2/2)
(AWX7209)

- E. VOL BLOCK



NOTE

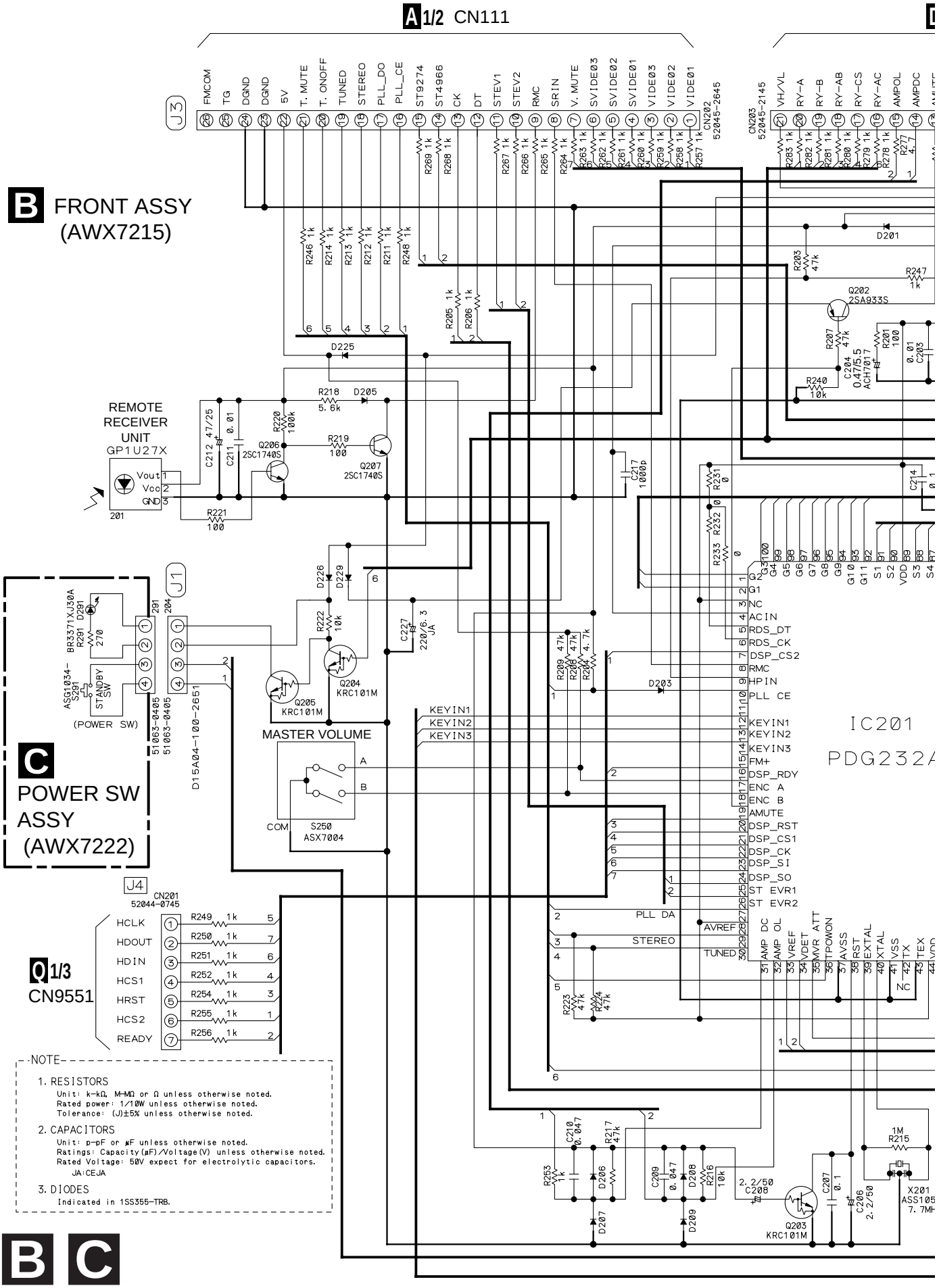
1. RESISTORS
   - Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
   - Rated power: 1/10W unless otherwise noted.
   - Tolerance: (J)±5% unless otherwise noted.
2. CAPACITORS
   - Unit: p-pF or μF unless otherwise noted.
   - Ratings: Capacity (μF) / Voltage (V) unless otherwise noted.
   - Rated Voltage: 50V expect for electrolytic capacitors.
   - CA: CECA
3. DIODES
   - Indicated in 1SS355-TRB


FL ch : AUDIO SIGNAL ROUTE (FRONT)
UPC4570G2 IC310(2/2)
VCC
C1355 0.01
GND A
20dB ATT
R1351 2.2k
R1352 240
Q1351 2SC2878(AB)-T
R1353 4.7k
C1351 1000p
C1352 4.7/50
R1354 100k
R1355 1.8k
IC310(1/2) UPC4570G2
C1353 2200p
R1356 11k
17dB PRE
C1354 4.7/50
R1357 100k
C1356 0.01
VEE
SWout
Cout
UPC4570G2 IC308(1/2)
V+5V
R345 2.2k
R346 2.2k
R347 2.2k
EV1
DT
CLK
C323 1000p
R315 1M
R317 1M
R319 1M
C325 0.068
C327 1/50
C329 1/50
C331 1/50
C1319 560p
IC305(1/2) UPC4570G2
C343 47/25
C339 0.01
SLout
R325 12k
C341 120p
R327 100k
SRout
IC302
LC7535M
(LC7536M)
ELECTRIC VOLUME
R323 3k
R322 3k
C340 120p
GNDA
R326 100k
R324 12k
IC305(2/2) UPC4570G2
C342 47/25
C322 1000p
R314 1M
R316 1M
C324 0.068
C326 1/50
C328 10/50
C330 1/50
C334 0.01
R318 1M
R1399 0
C335 0.01
14dB PRE
C338 0.01
VCC
GNDD
IC308(2/2) UPC4570G2
FLch
FLout
FRout
R143 1k
D110 UDZS5.1B
C153 10/50

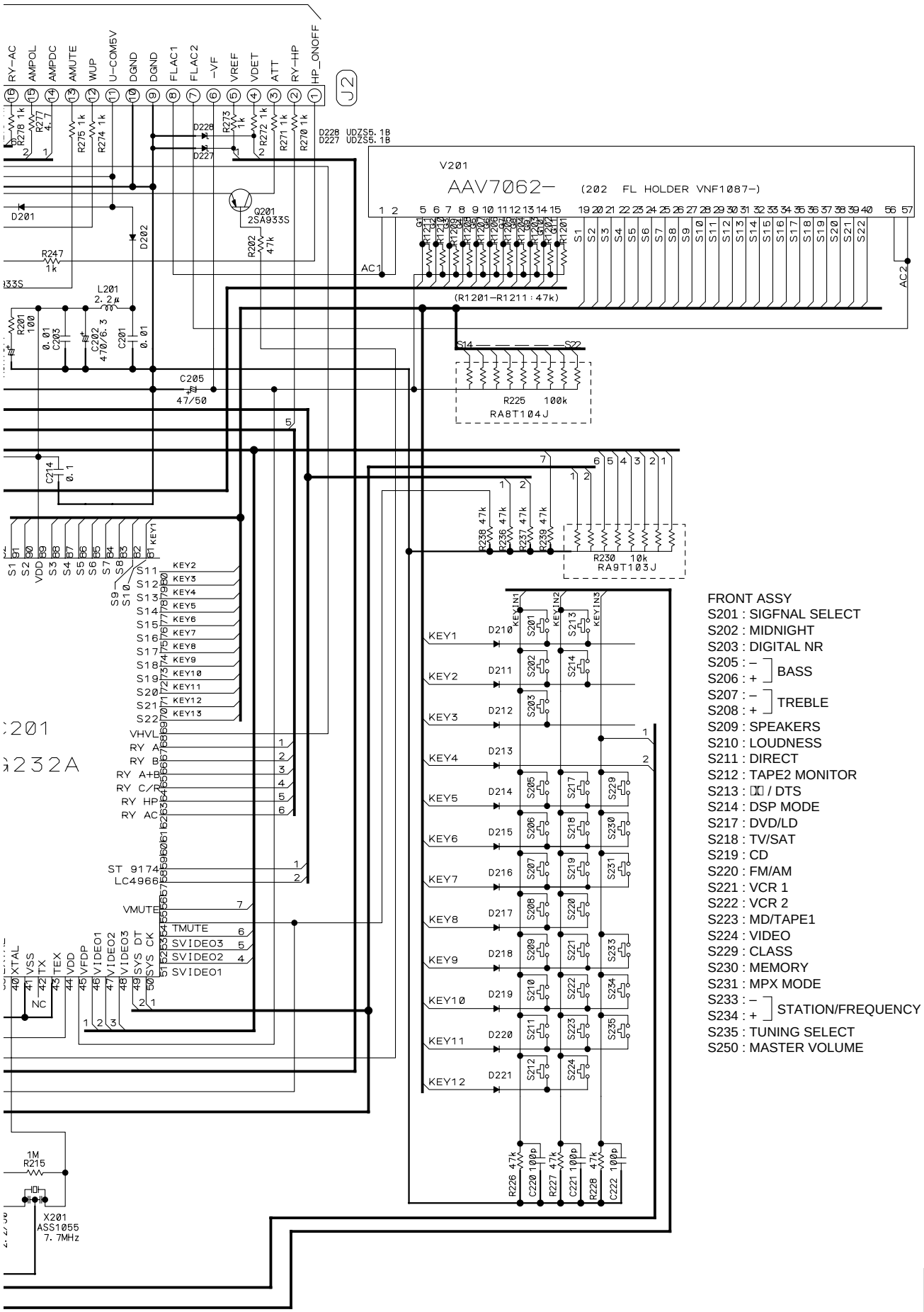
A1/2

A2/2

3.4 FRONT and POWER SW ASSEMBLIES

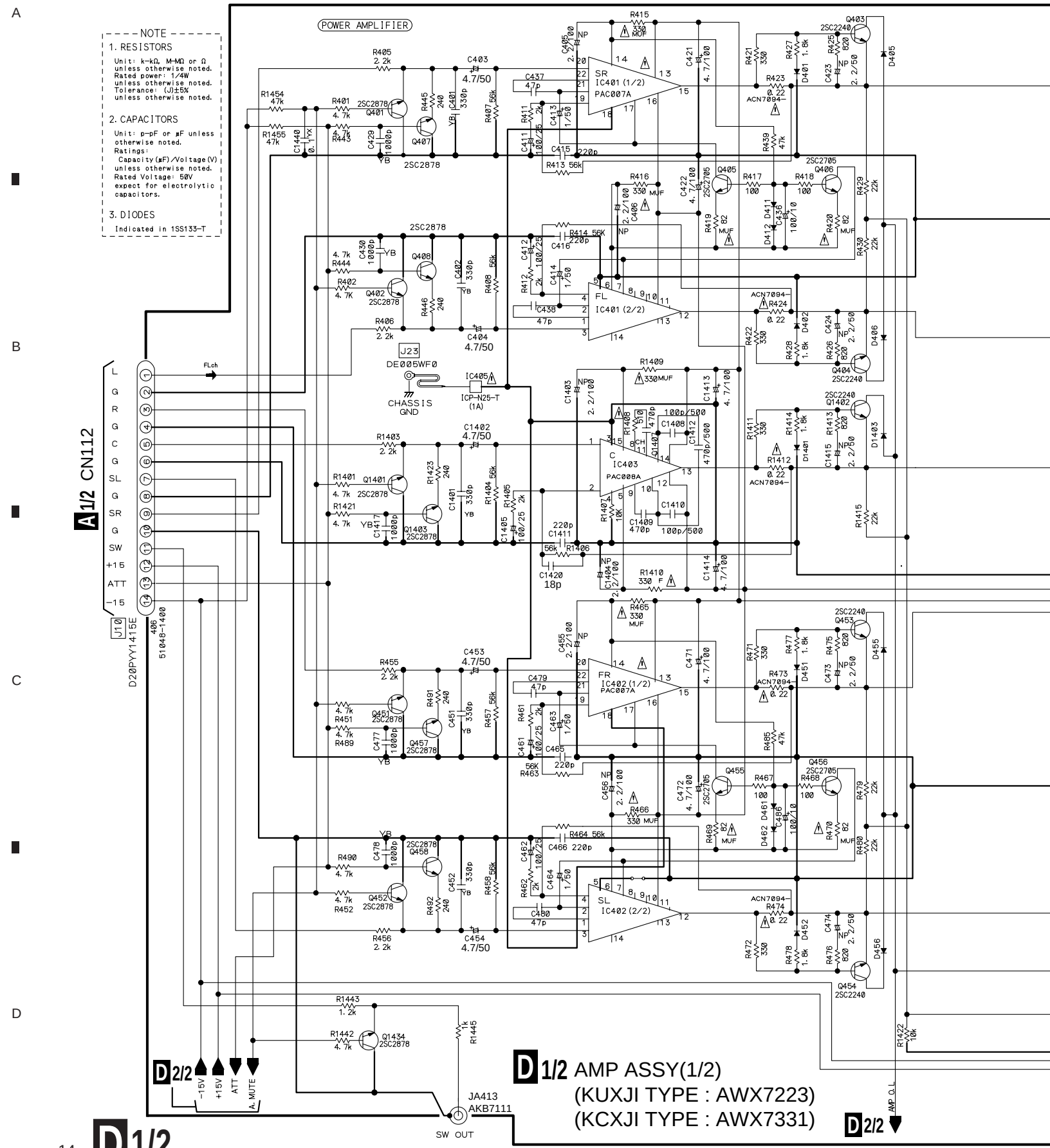


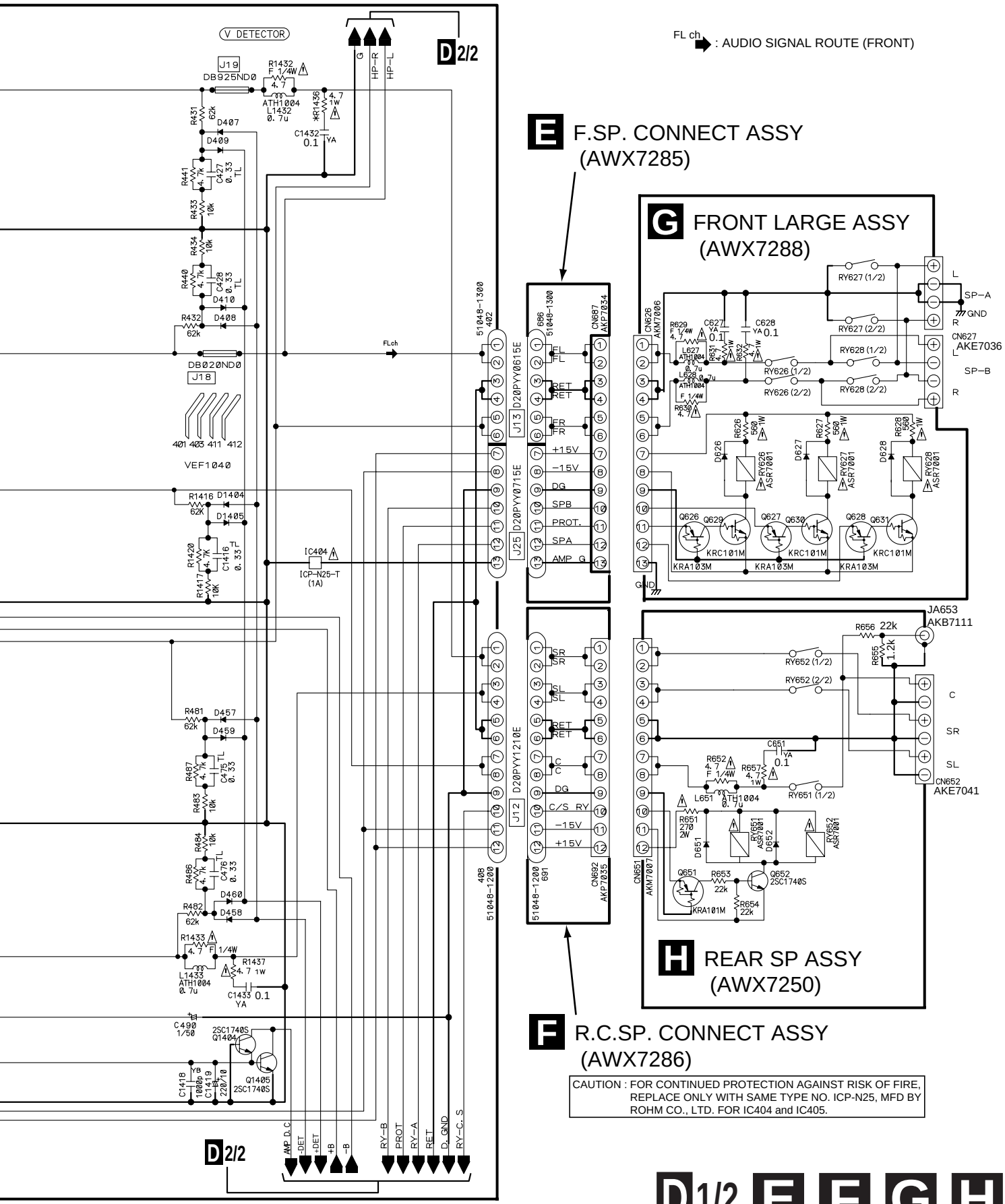
D 2/2 CN401



FRONT ASSY
S201 : SIGFNAL SELECT
S202 : MIDNIGHT
S203 : DIGITAL NR
S205 : – ┐ BASS
S206 : + ┘
S207 : – ┐ TREBLE
S208 : + ┘
S209 : SPEAKERS
S210 : LOUDNESS
S211 : DIRECT
S212 : TAPE2 MONITOR
S213 : □□ / DTS
S214 : DSP MODE
S217 : DVD/LD
S218 : TV/SAT
S219 : CD
S220 : FM/AM
S221 : VCR 1
S222 : VCR 2
S223 : MD/TAPE1
S224 : VIDEO
S229 : CLASS
S230 : MEMORY
S231 : MPX MODE
S233 : – ┐ STATION/FREQUENCY
S234 : + ┘
S235 : TUNING SELECT
S250 : MASTER VOLUME

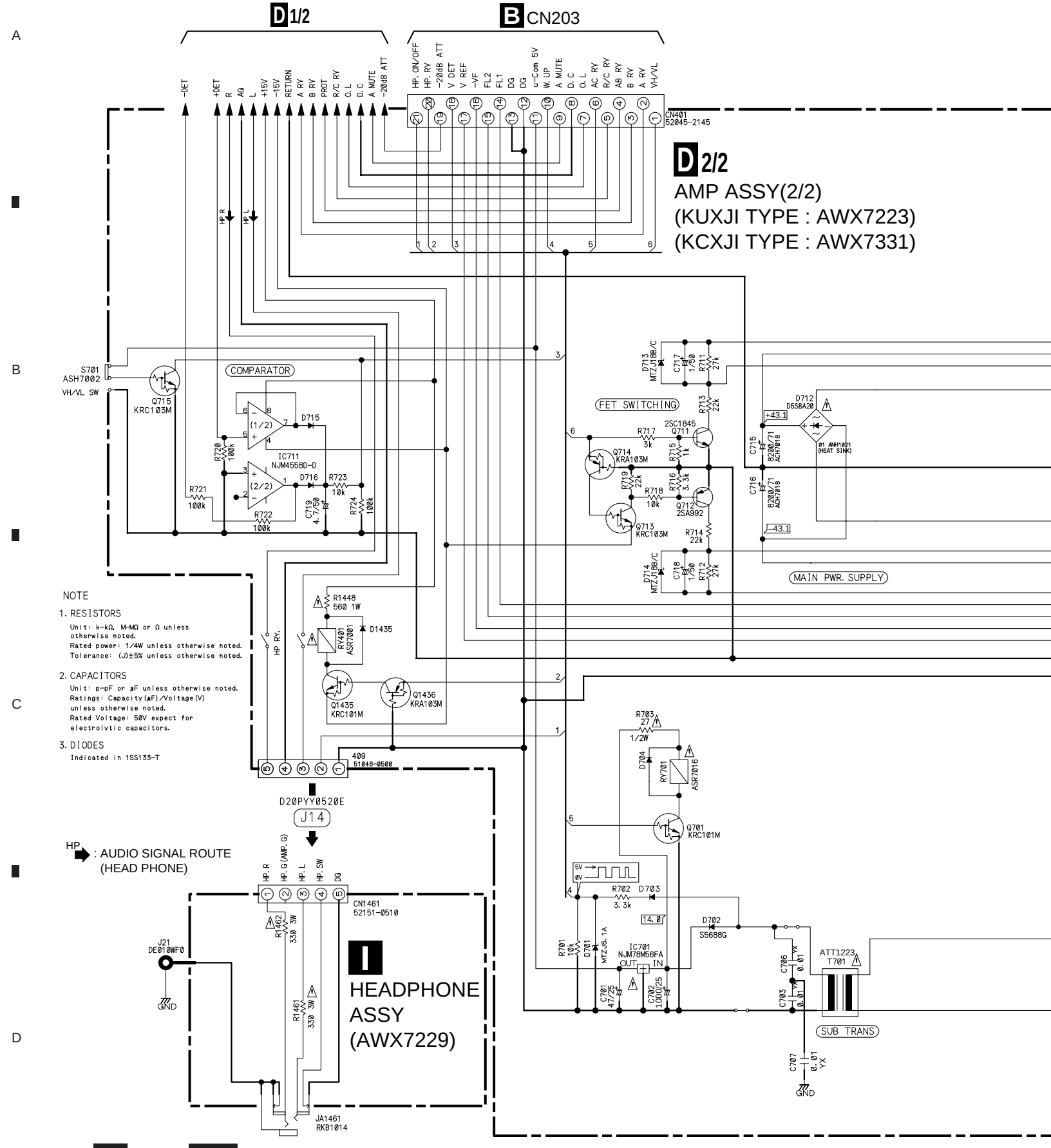
3.5 AMP (1/2), F.SP.CONNECT, R.C.SP.CONNECT, FRONT LARGE and REAR SP ASSEMBLIES

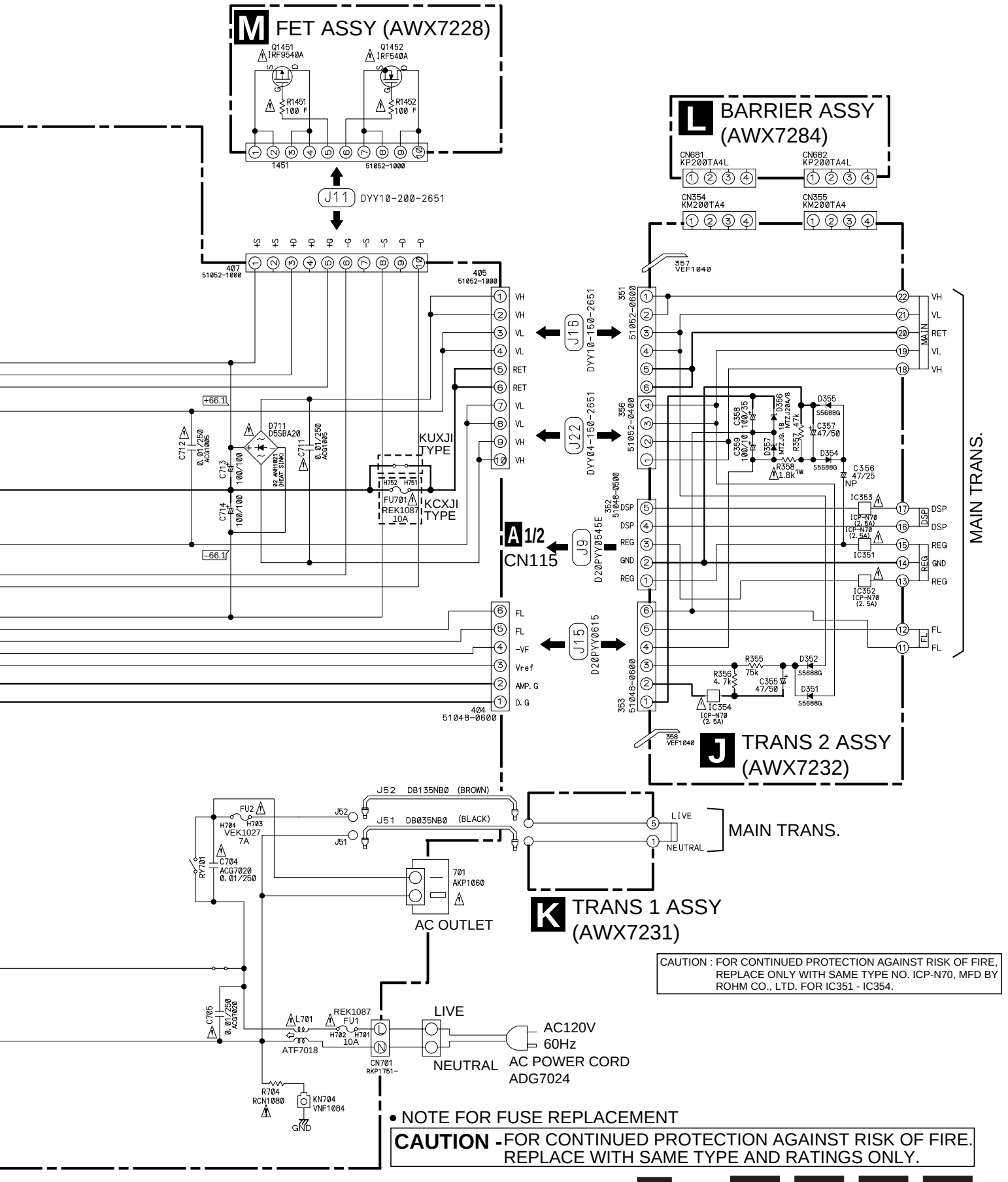




CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. ICP-N25, MFD BY ROHM CO., LTD. FOR IC404 and IC405.

3.6 AMP (2/2), HEADPHONE, TRANS 2, TRANS 1, BARRIER and FET ASSEMBLIES



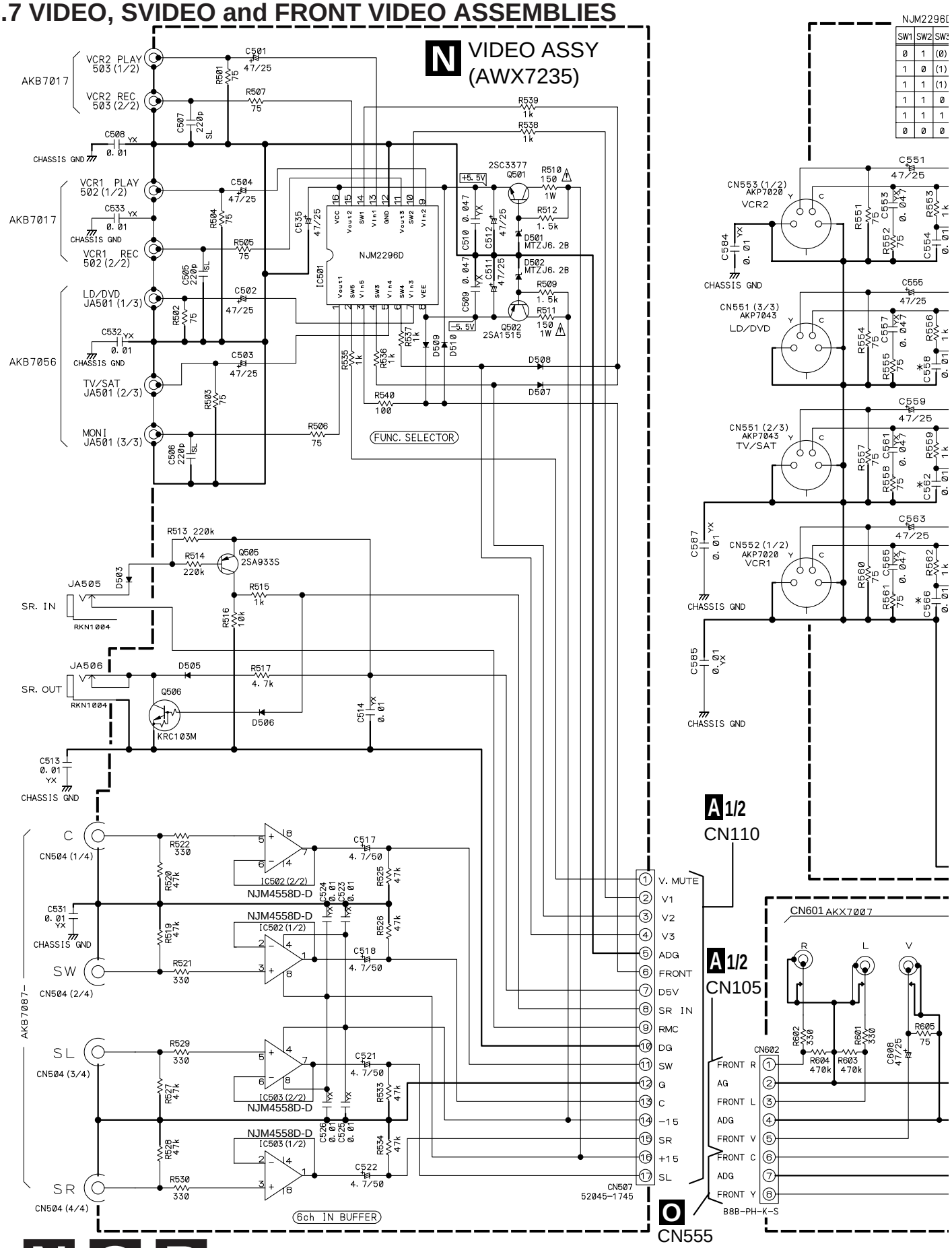


CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. ICP-N70, MFD BY ROHM CO., LTD. FOR IC351 - IC354.

• NOTE FOR FUSE REPLACEMENT

CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS ONLY.

3.7 VIDEO, SVIDEO and FRONT VIDEO ASSEMBLIES



NOP

NJM2296D control port status

SW1	SW2	SW3	SW4	SW5	Vout1	Vout2	Vout3
0	1	(0)	(0)	1	Vin1	mute	Vin1
1	0	(1)	0	1	Vin2	Vin2	mute
1	1	(1)	0	1	Vin3	Vin3	Vin3
1	1	0	1	1	Vin4	Vin4	Vin4
1	1	1	1	1	Vin5	Vin5	Vin5
0	0	0	0	0	mute	mute	mute

O SVIDEO ASSY (AWX7237)

Y : S-VIDEO Y-SIGNAL ROUTE
C : S-VIDEO C-SIGNAL ROUTE
DC : S-VIDEO C-DC ROUTE

CN555 B3B-PH-K-S (Y, G, C) — **P** CN602

CN551 (1/3) AKP7043 MON OUT
CN552 (2/2) AKP7020 VCR1 OUT
CN553 (2/2) AKP7020 VCR2 OUT

IC551 NJM2296D (S-Y FUNC. SELECTOR)
IC552 NJM2296D (S-C FUNC. SELECTOR)
IC553 TC4051BP (S-DC FUNC. SELECTOR)

CN554 52044-1145
1 -15V
2 GND
3 +15V
4 D5V
5 VIDEO1
6 VIDEO2
7 VIDEO3
8 SVIDEO1
9 SVIDEO2
10 SVIDEO3
11 V. MUTE

A 1/2 CN109

P FRONT VIDEO ASSY (AWX7371)

X7007 (L, V, C, Y)

PCB BINDER 601 VEF1040
Y20 ADX7248
CHASSIS GND

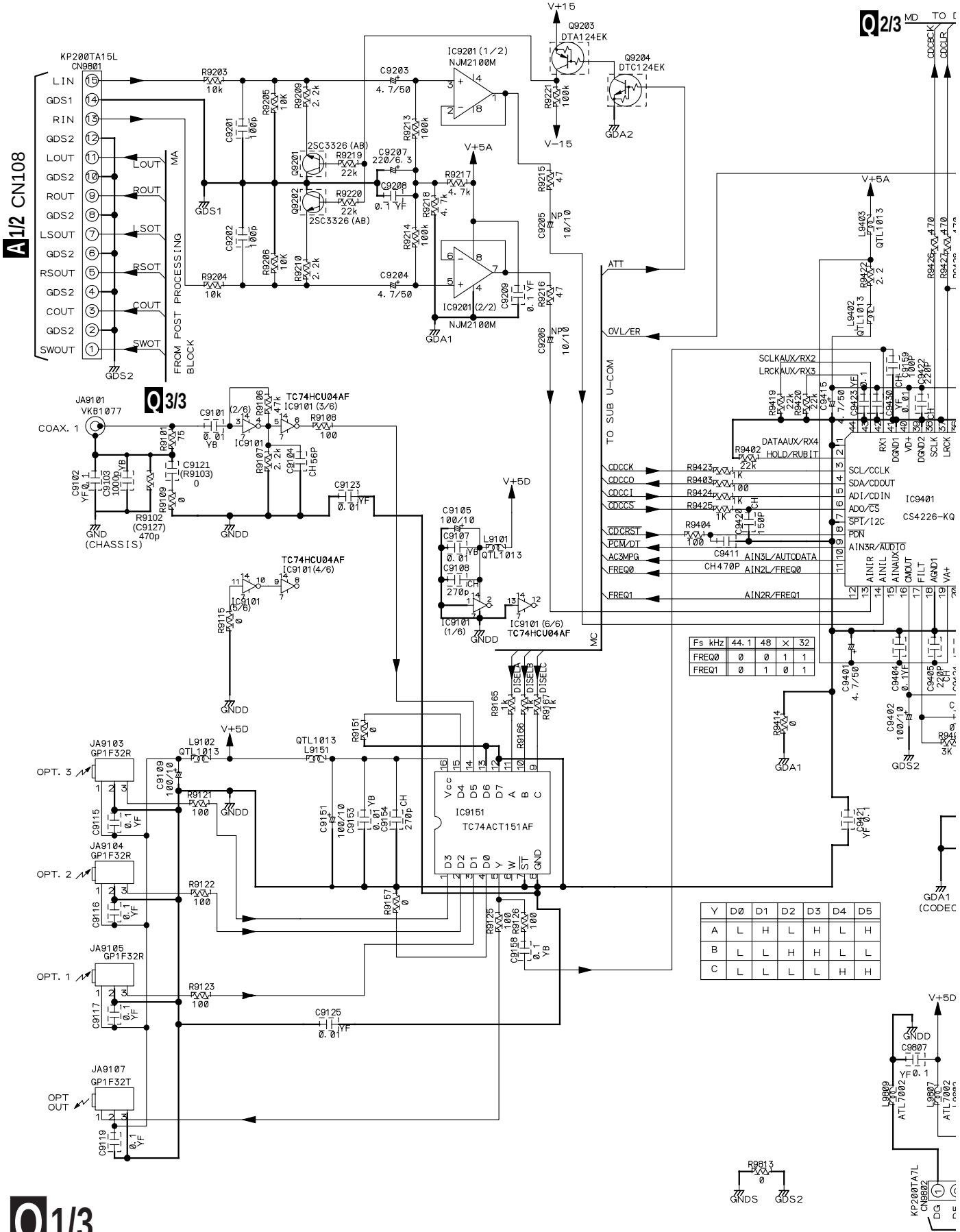
*marked parts are axial capacitors

C554, C558, C562, C566, C568, C569	CKPUYY103M16

NOTE

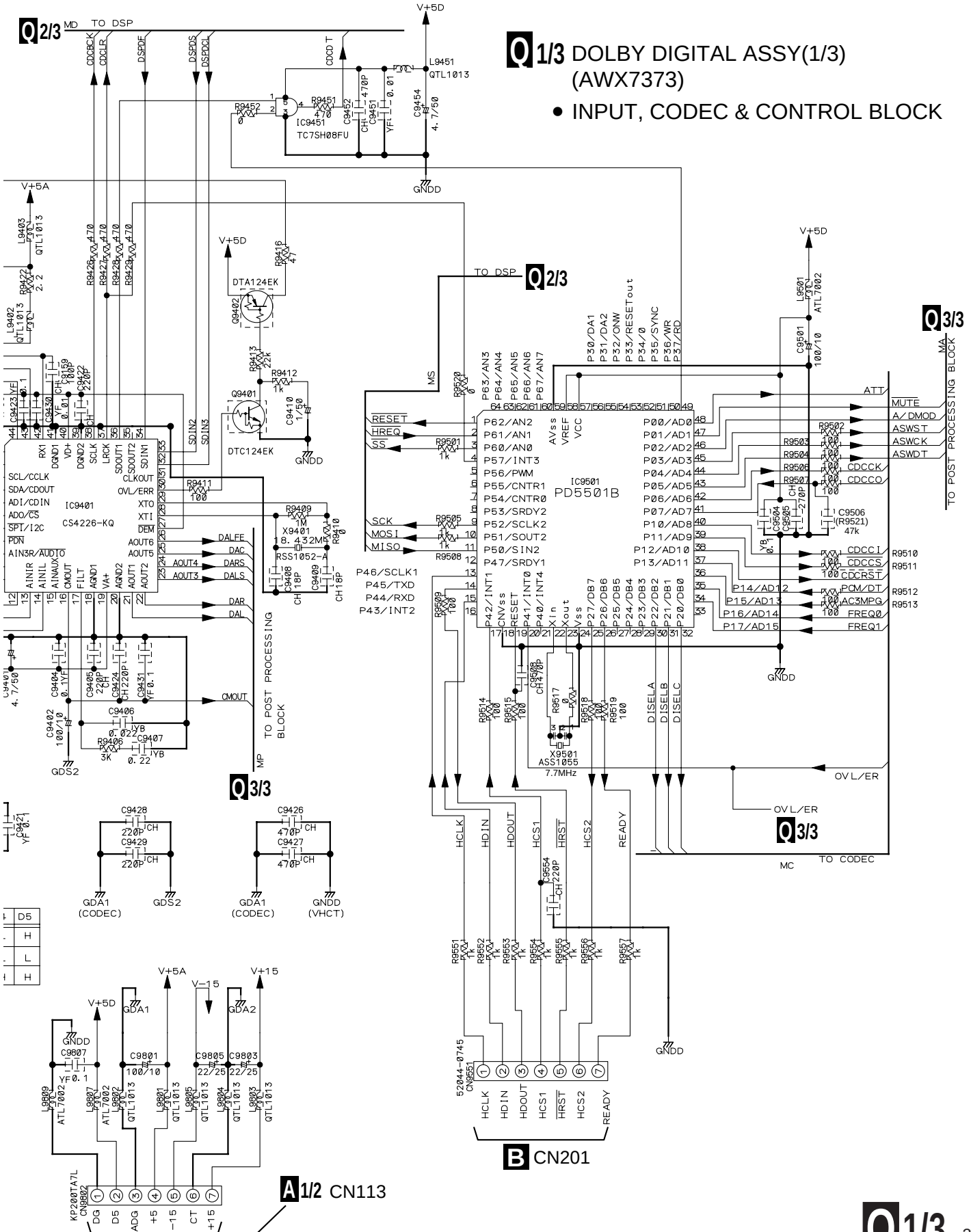
1. RESISTORS
   Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
   Rated power: 1/4W unless otherwise noted.
   Tolerance: (J)±5% unless otherwise noted.
2. CAPACITORS
   Unit: p-pF or μF unless otherwise noted.
   Ratings: Capacity(μF)/Voltage(V) unless otherwise noted.
   Rated Voltage: 50V expect for electrolytic capacitors.
3. DIODES
   Indicated in 1SS133-T

3.8 DOLBY DIGITAL ASSY (1/3)

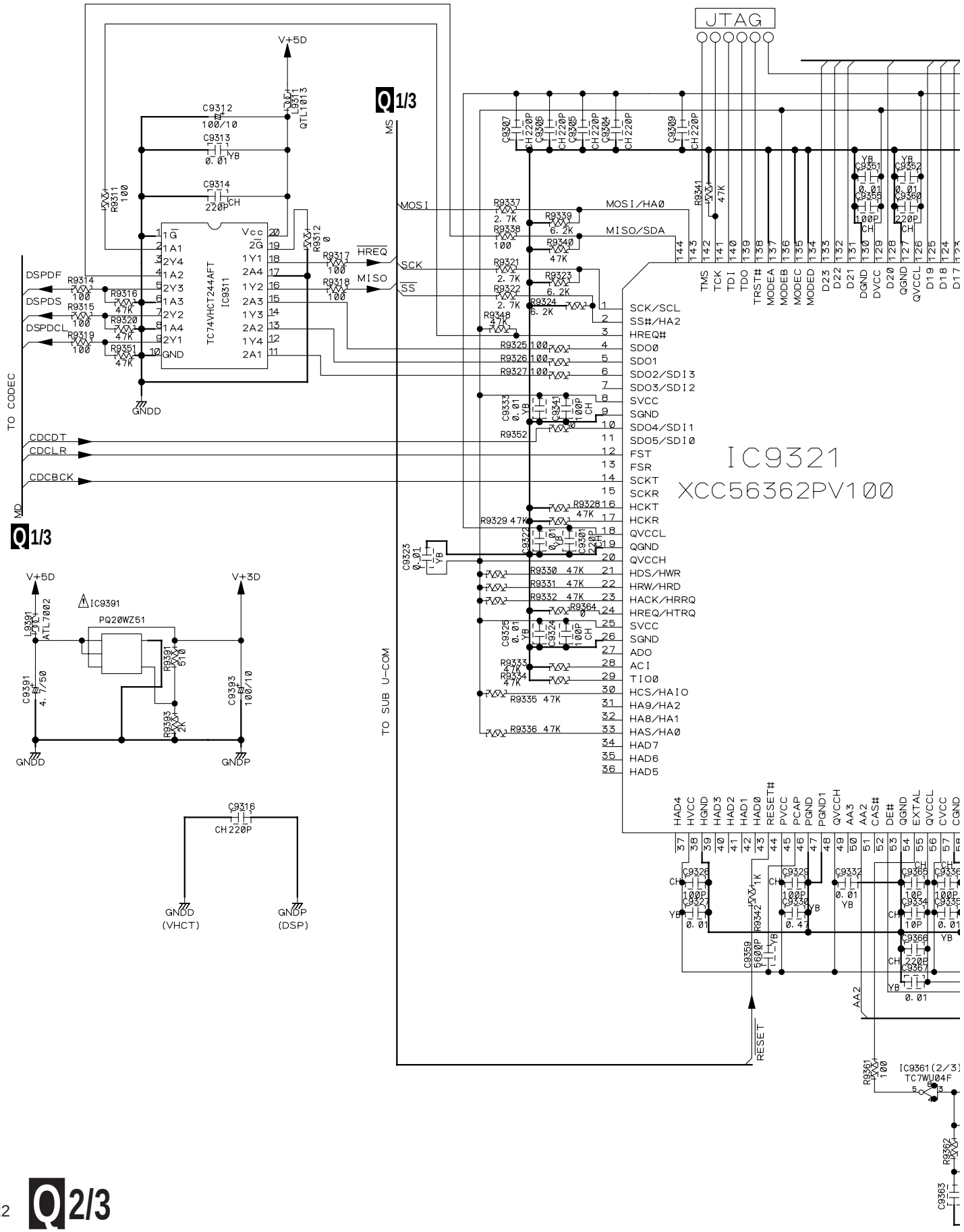


Q1/3 DOLBY DIGITAL ASSY(1/3) (AWX7373)

- INPUT, CODEC & CONTROL BLOCK

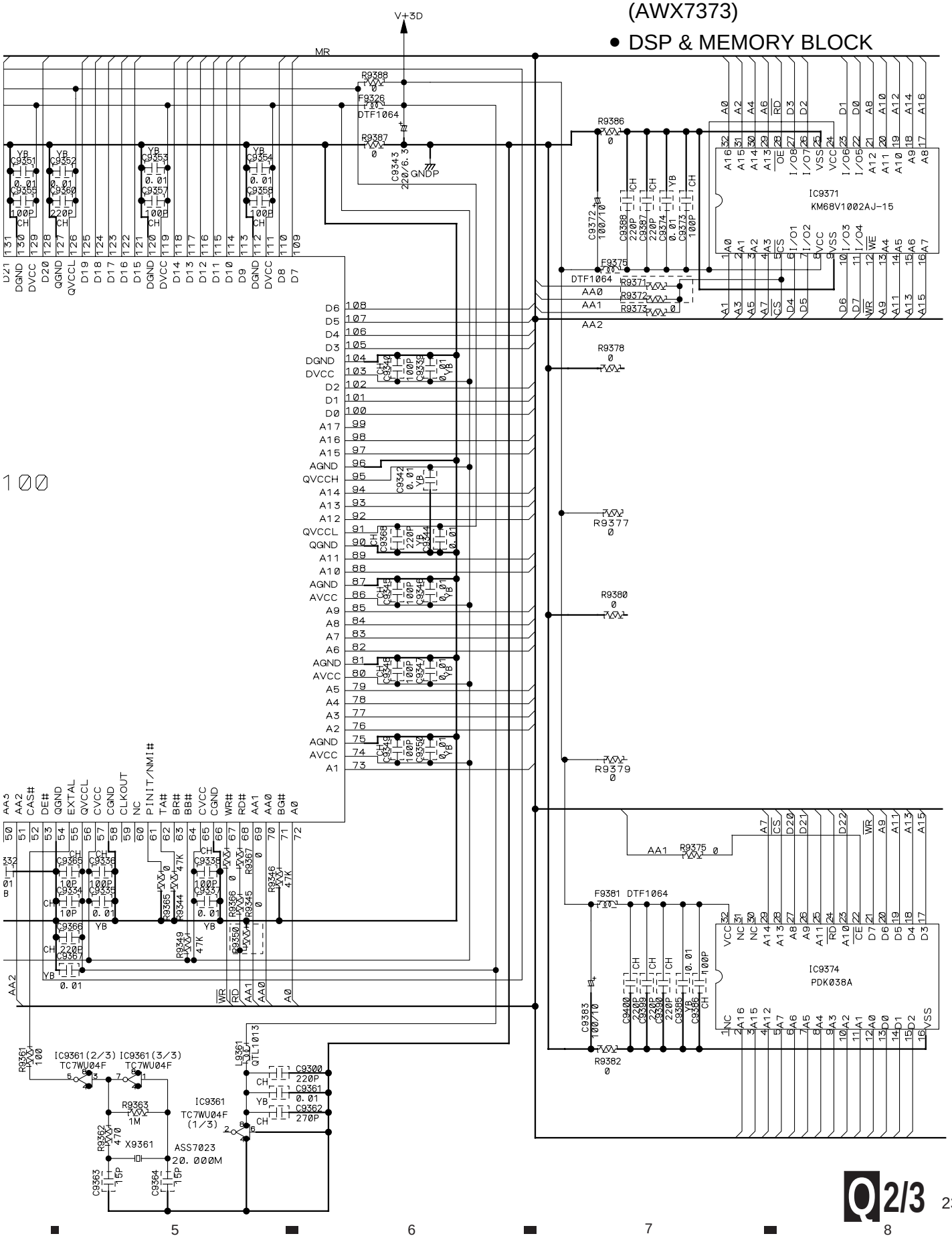


3.9 DOLBY DIGITAL ASSY (2/3)

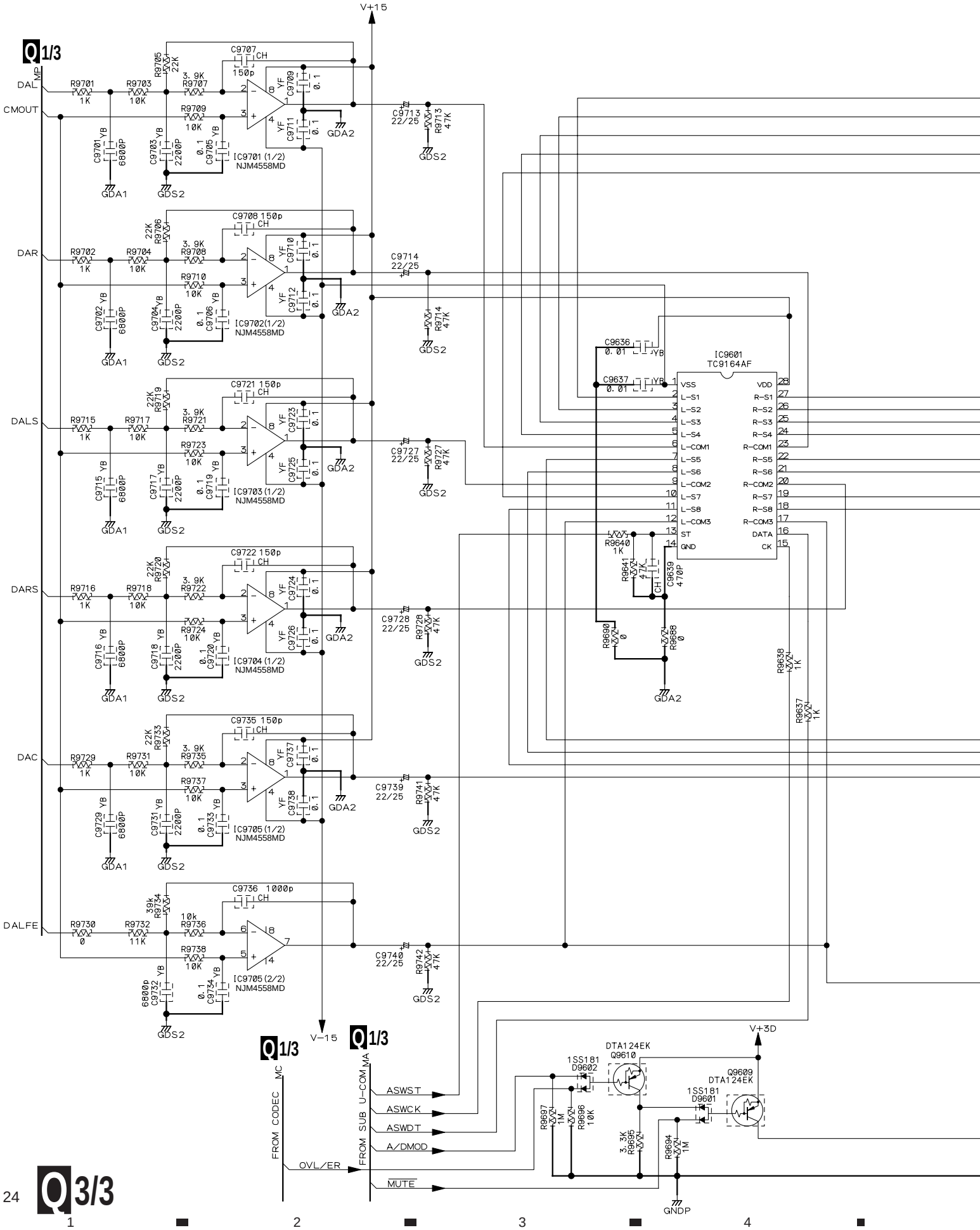


Q 2/3 DOLBY DIGITAL ASSY(2/3) (AWX7373)

- DSP & MEMORY BLOCK

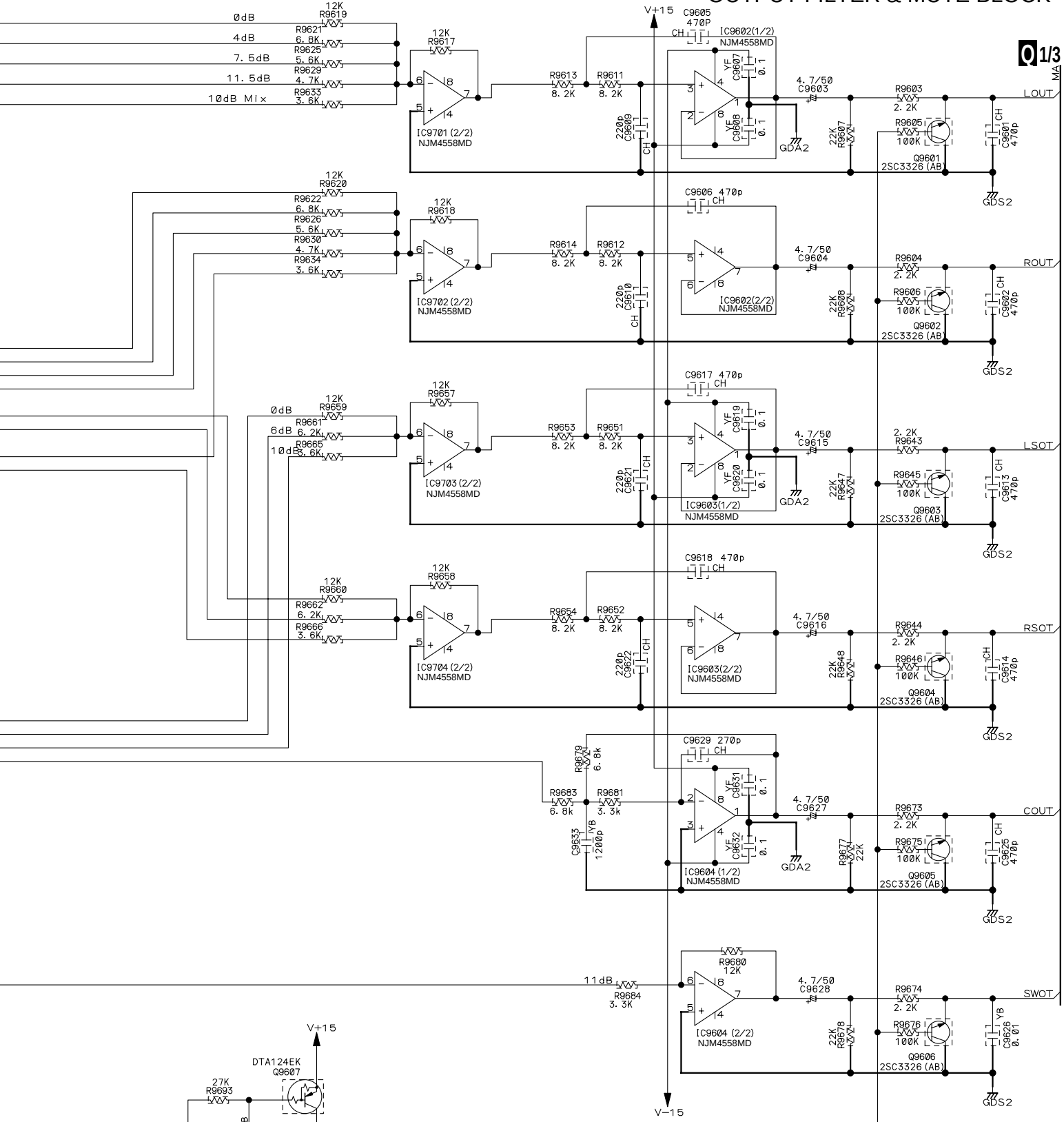


3.10 DOLBY DIGITAL ASSY (3/3)



Q3/3 DOLBY DIGITAL ASSY(3/3) (AWX7373)

- OUTPUT FILTER & MUTE BLOCK



4. PCB CONNECTION DIAGRAM

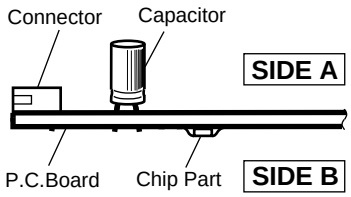
4.1 INPUT and FRONT VIDEO ASSEMBLIES

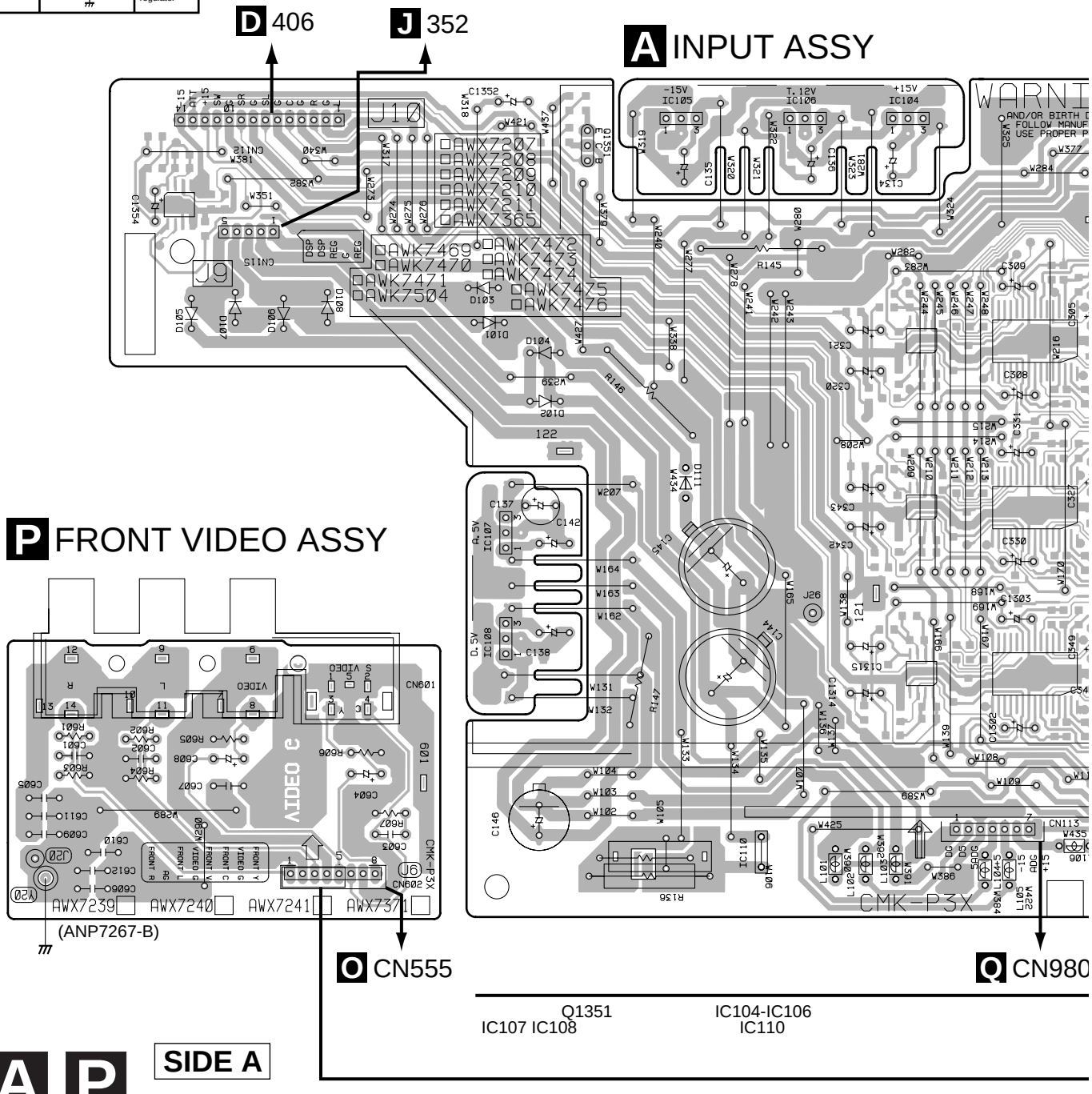
NOTE FOR PCB DIAGRAMS :

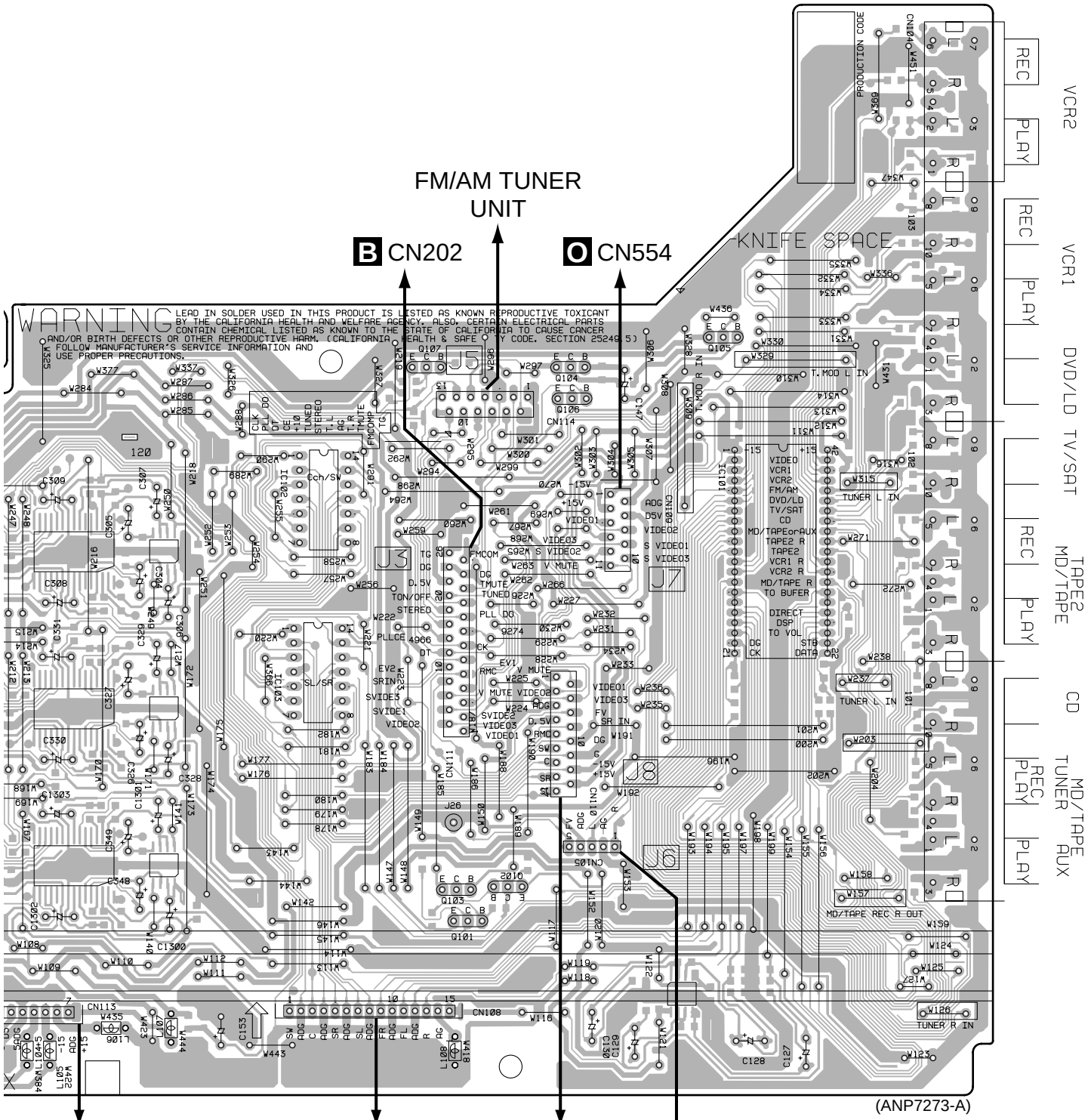
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

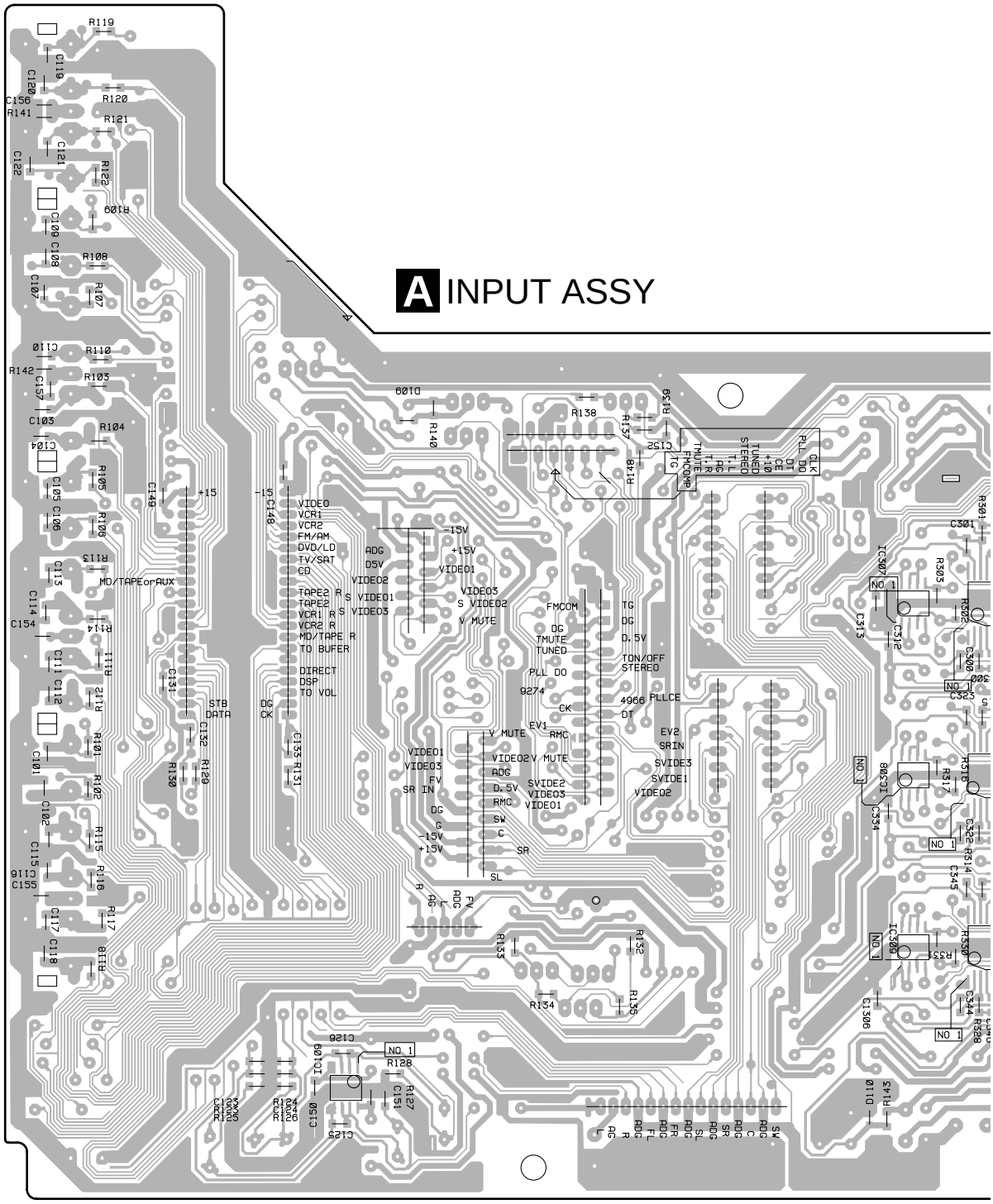
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E	Transistor
B C E	B C E	Transistor with resistor
D G S	D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.

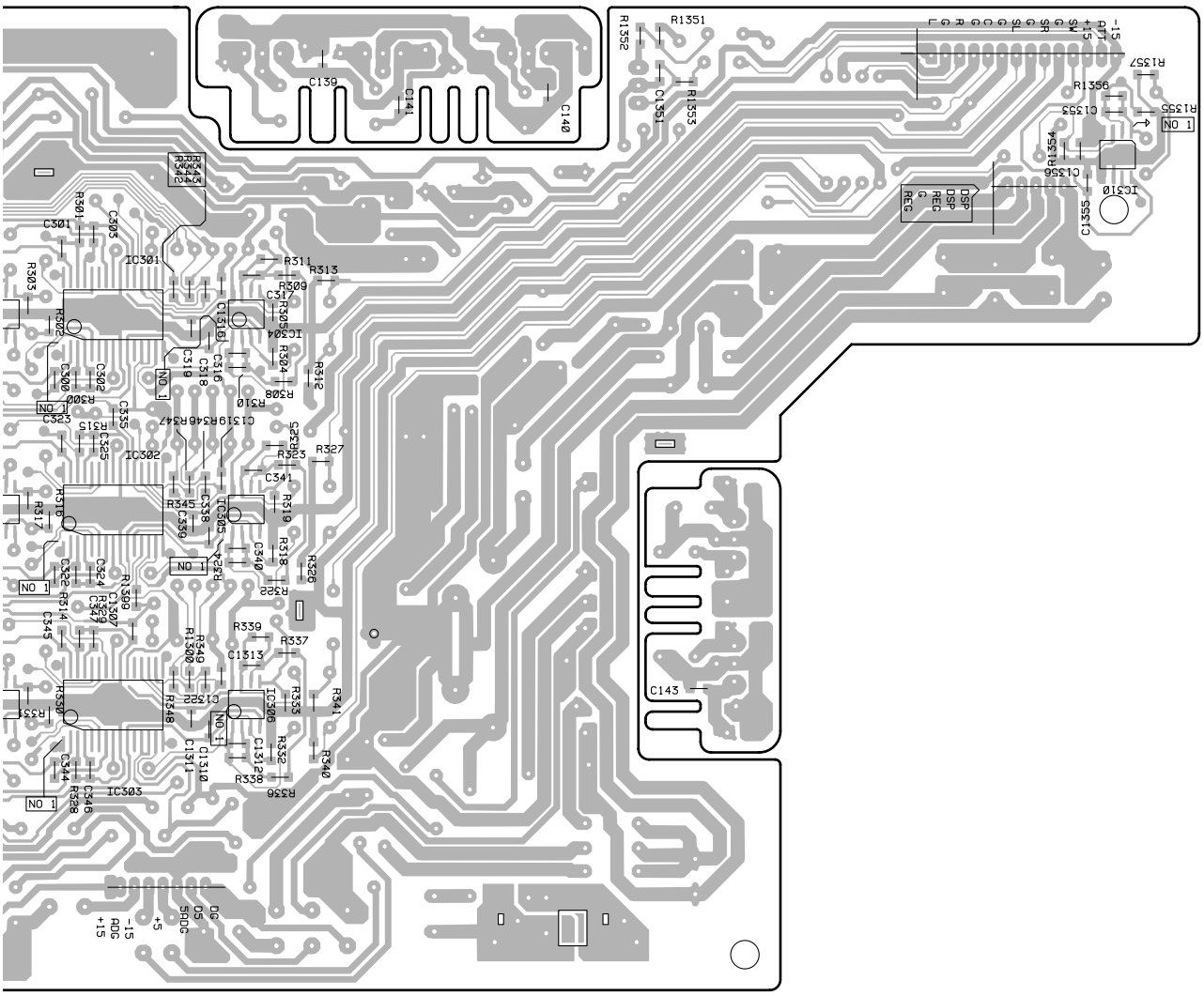





FM/AM TUNER UNIT
B CN202
O CN554
KNIFE SPACE
WARNING
LEAD IN SOLDER USED IN THIS PRODUCT IS LISTED AS KNOWN TO BE REPRODUCTIVE TOXICANT BY THE CALIFORNIA HEALTH AND WELFARE AGENCY. ALSO, CERTAIN ELECTRICAL PARTS CONTAIN CHEMICAL LISTED AS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND/OR BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. (CALIFORNIA HEALTH & SAFETY CODE. SECTION 25249.5) FOLLOW MANUFACTURER'S SERVICE INFORMATION AND USE PROPER PRECAUTIONS.
PRODUCTION CODE
REC
PLAY
VCR2
VCR1
DVD/LD TV/SAT
TAPE2 MD/TAPE
CD
MD/TAPE TUNER AUX
TUNER L IN
TUNER R IN
MD/TAPE REC R OUT
(ANP7273-A)
Q CN9802
Q CN9801
N CN507
IC102
IC103
Q104-Q107
Q101-Q103
IC101
SIDE A



SIDE B

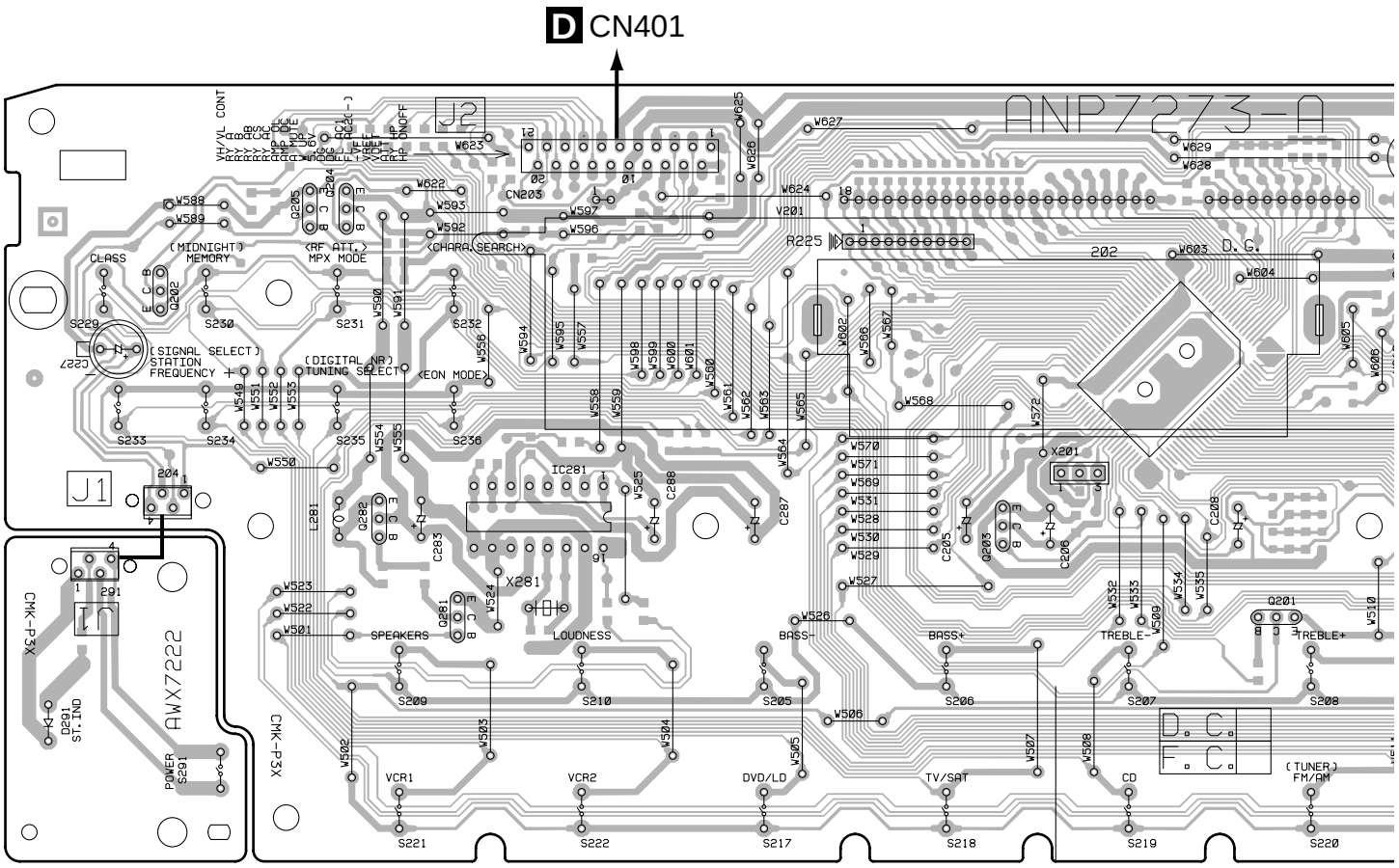


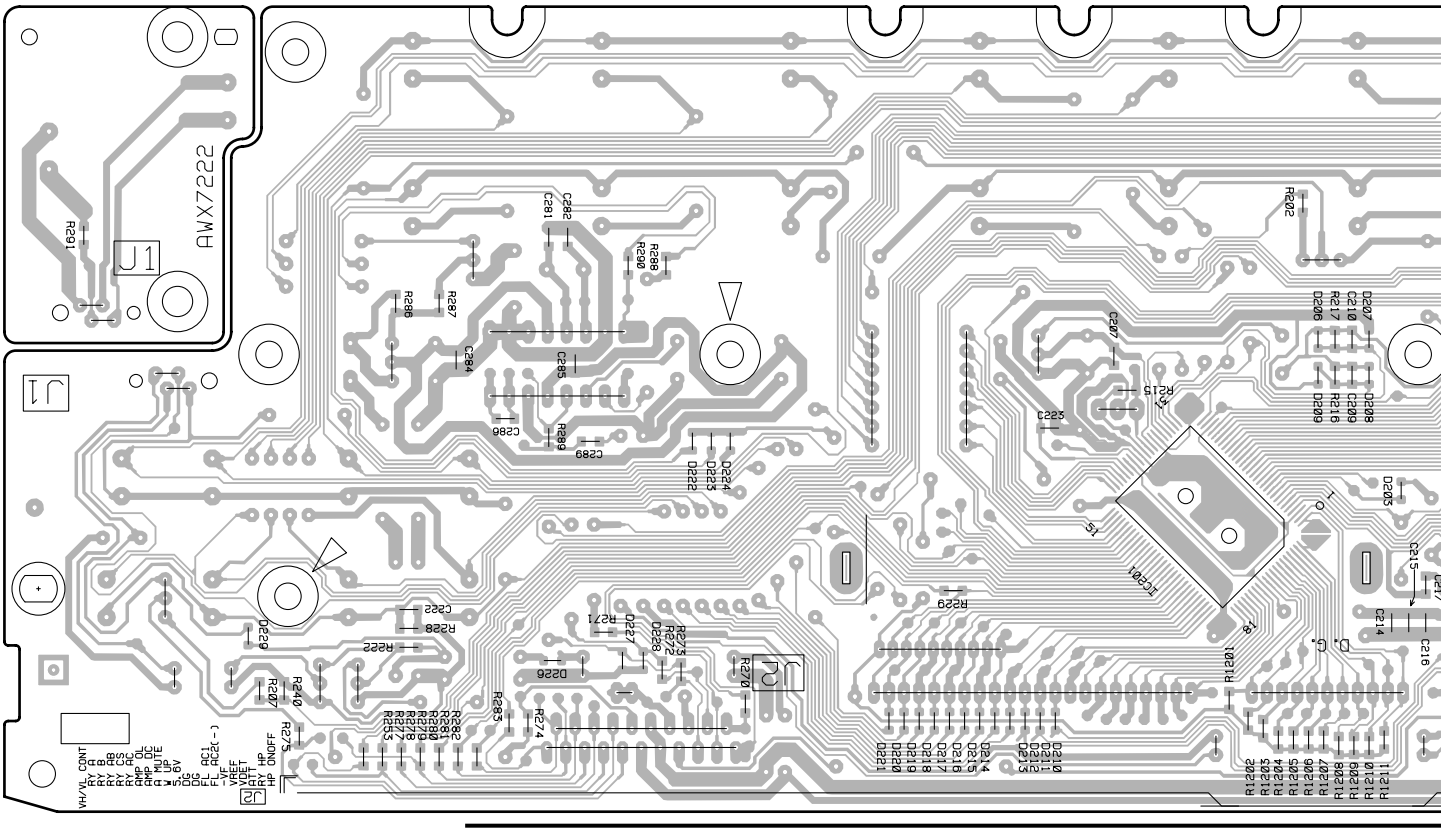
(ANP7273-A)

)7-IC309 IC301-IC303 IC304-IC306 IC310

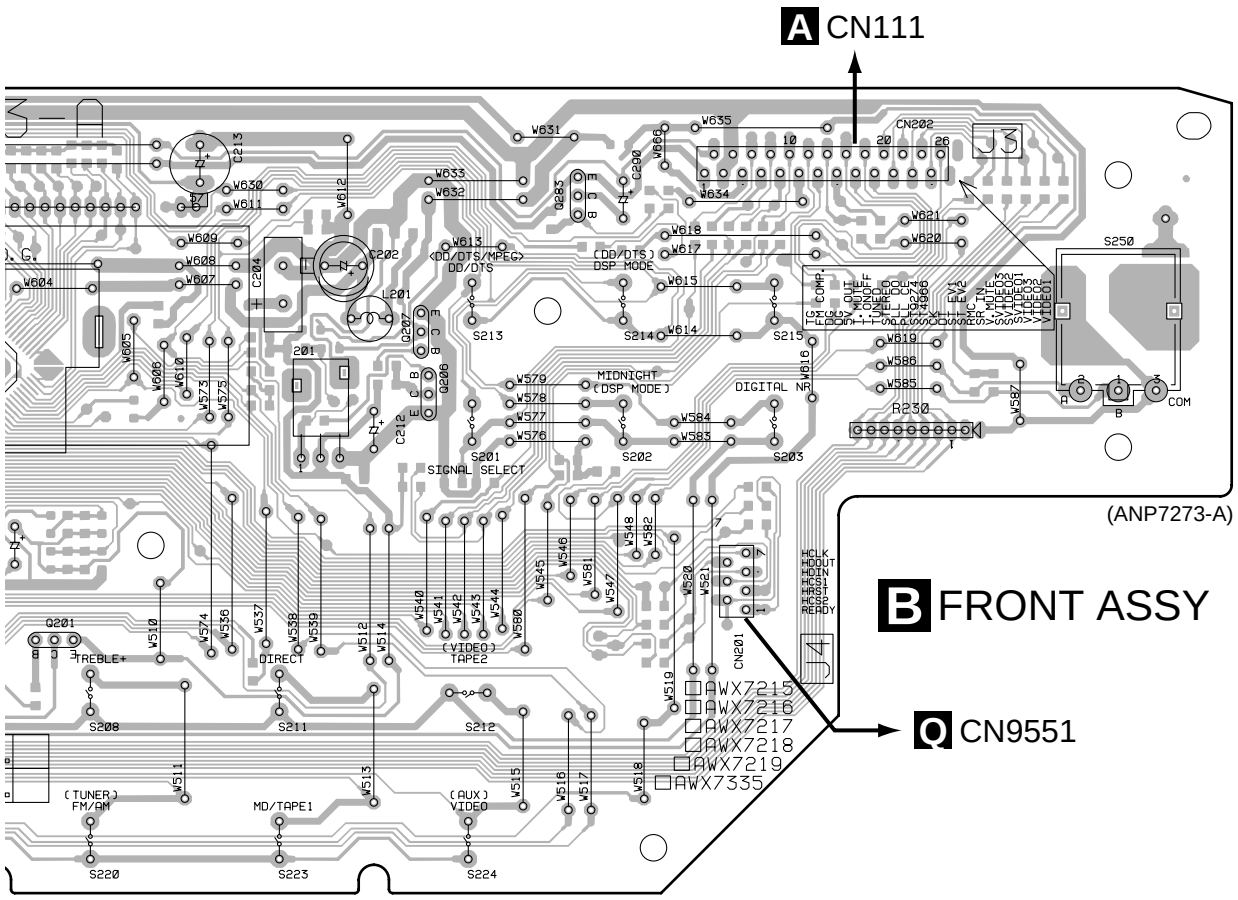
SIDE B

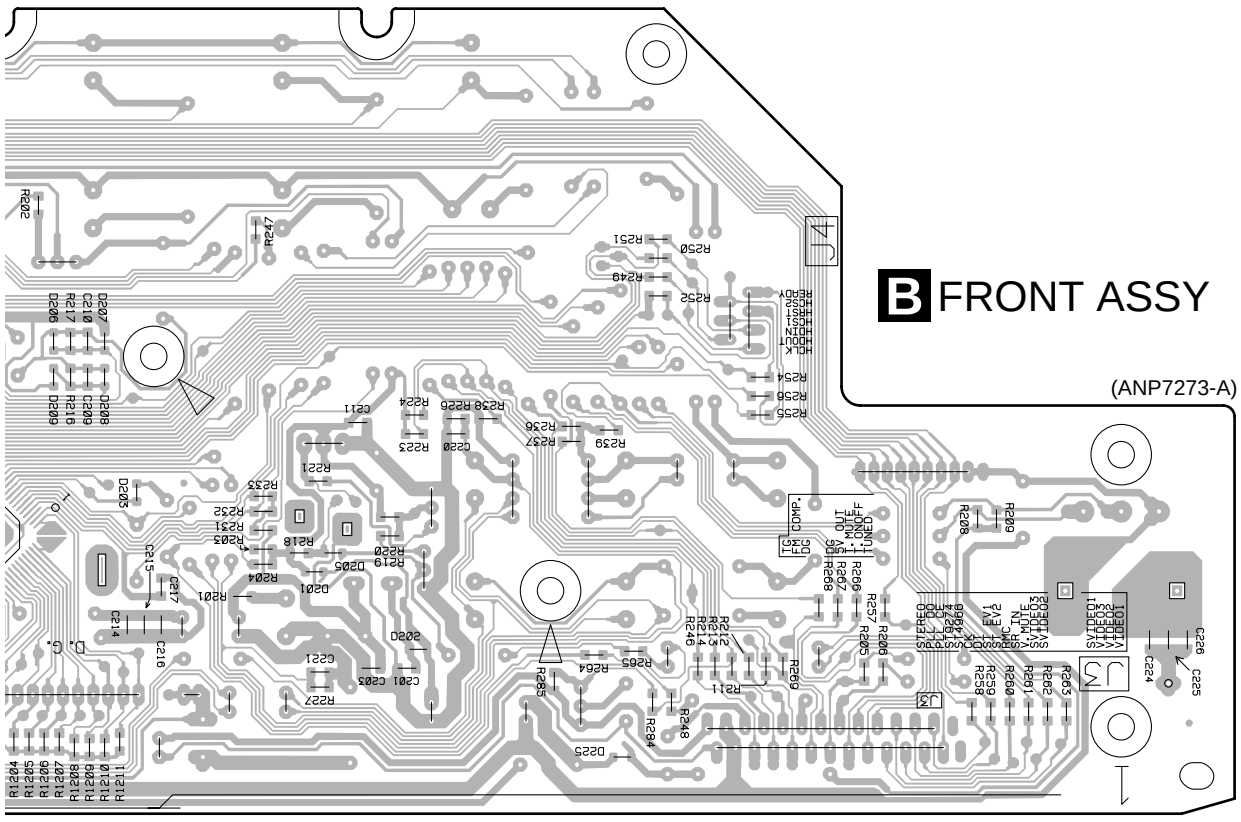
4.2 FRONT and POWER SW ASSEMBLIES



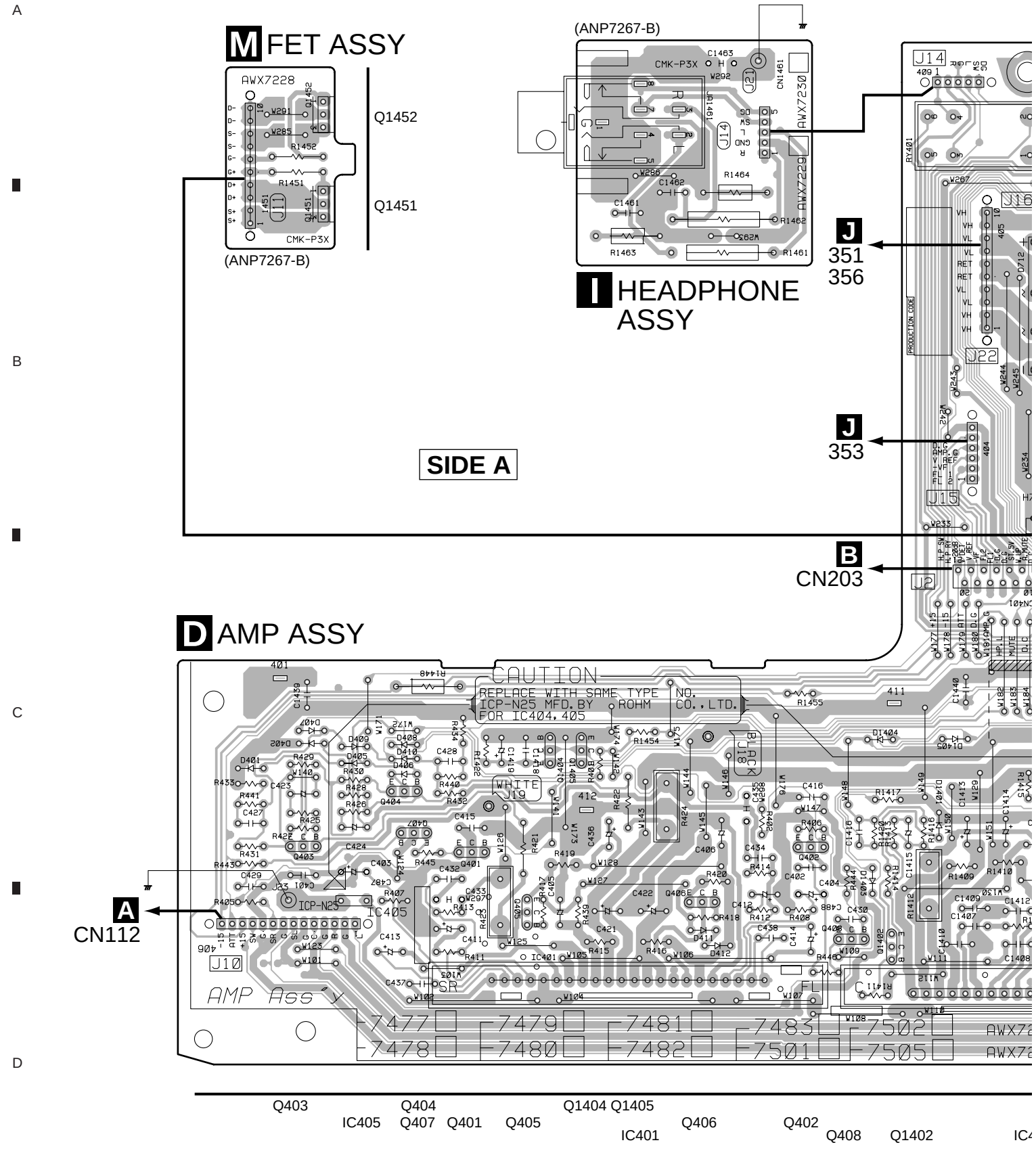


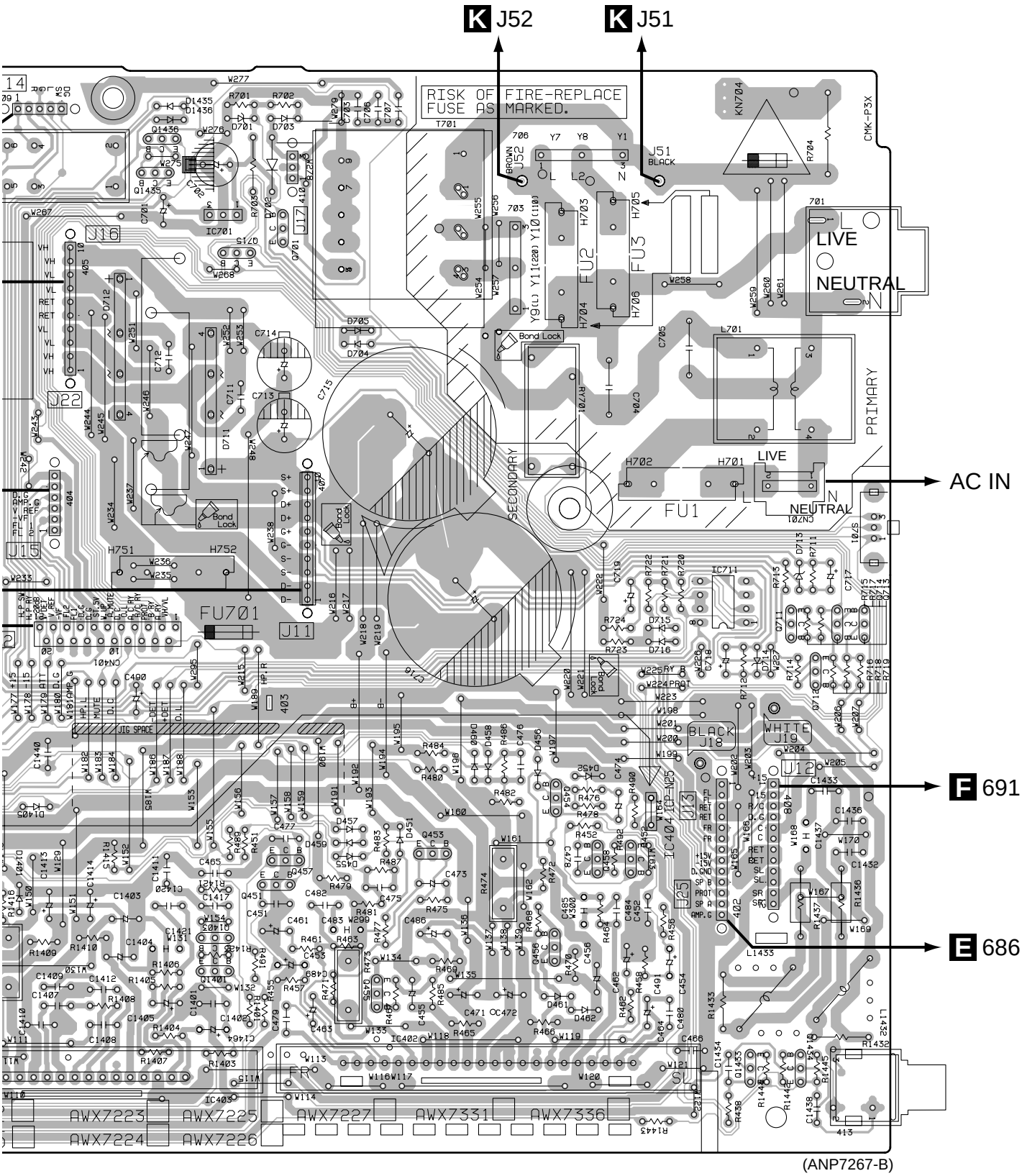
B C


A CN111
B FRONT ASSY
Q CN9551
(ANP7273-A)
SIDE A
Q201
Q207 Q206


B FRONT ASSY
(ANP7273-A)
SIDE B

4.3 AMP, HEADPHONE and FET ASSEMBLIES

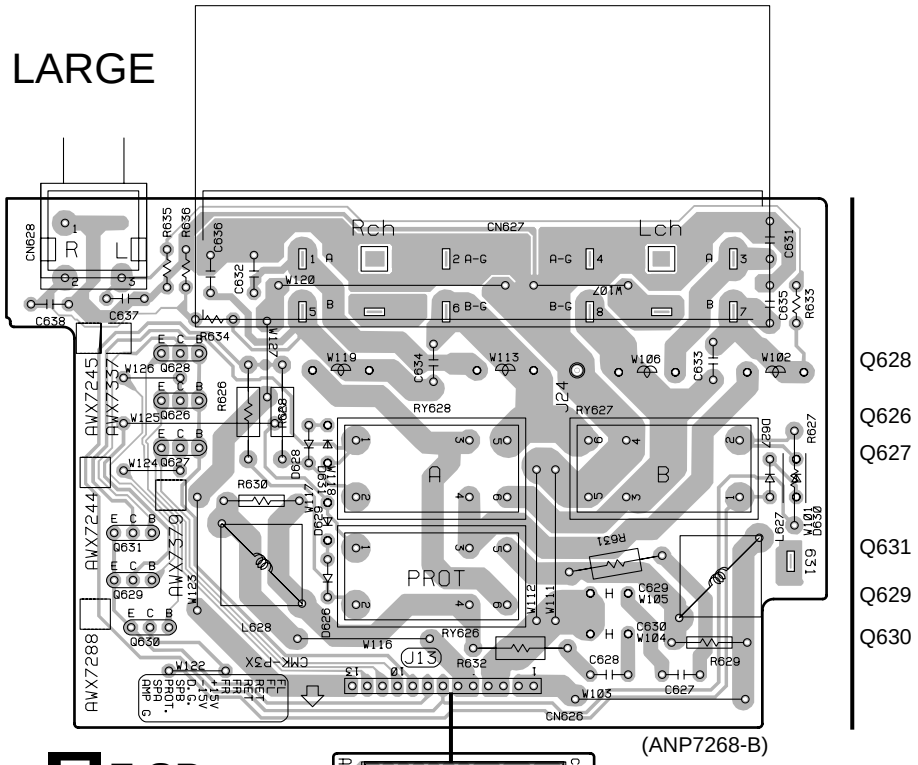




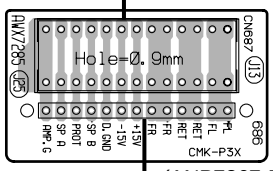
Q1436 Q1435 IC701 Q701 Q715 Q453 Q454 IC711
)2 IC403 Q1403 Q1401 Q451 Q457 Q455 IC402 Q456 Q458 IC404 Q711-Q714
Q452 Q1433 Q1434

4.4 F.SP.CONNECT, R.C.SP.CONNECT, FRONT LARGE and REAR SP ASSEMBLIES

G FRONT LARGE ASSY

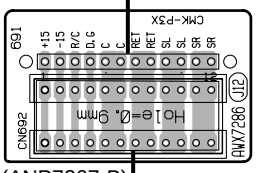


E F.SP. CONNECT ASSY

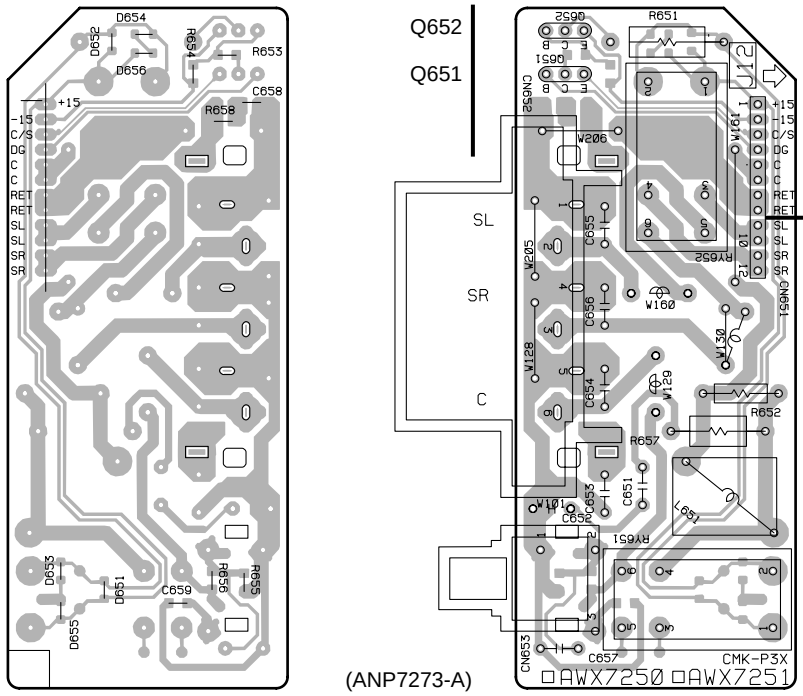


D 402

D 408



F R.C.SP. CONNECT ASSY



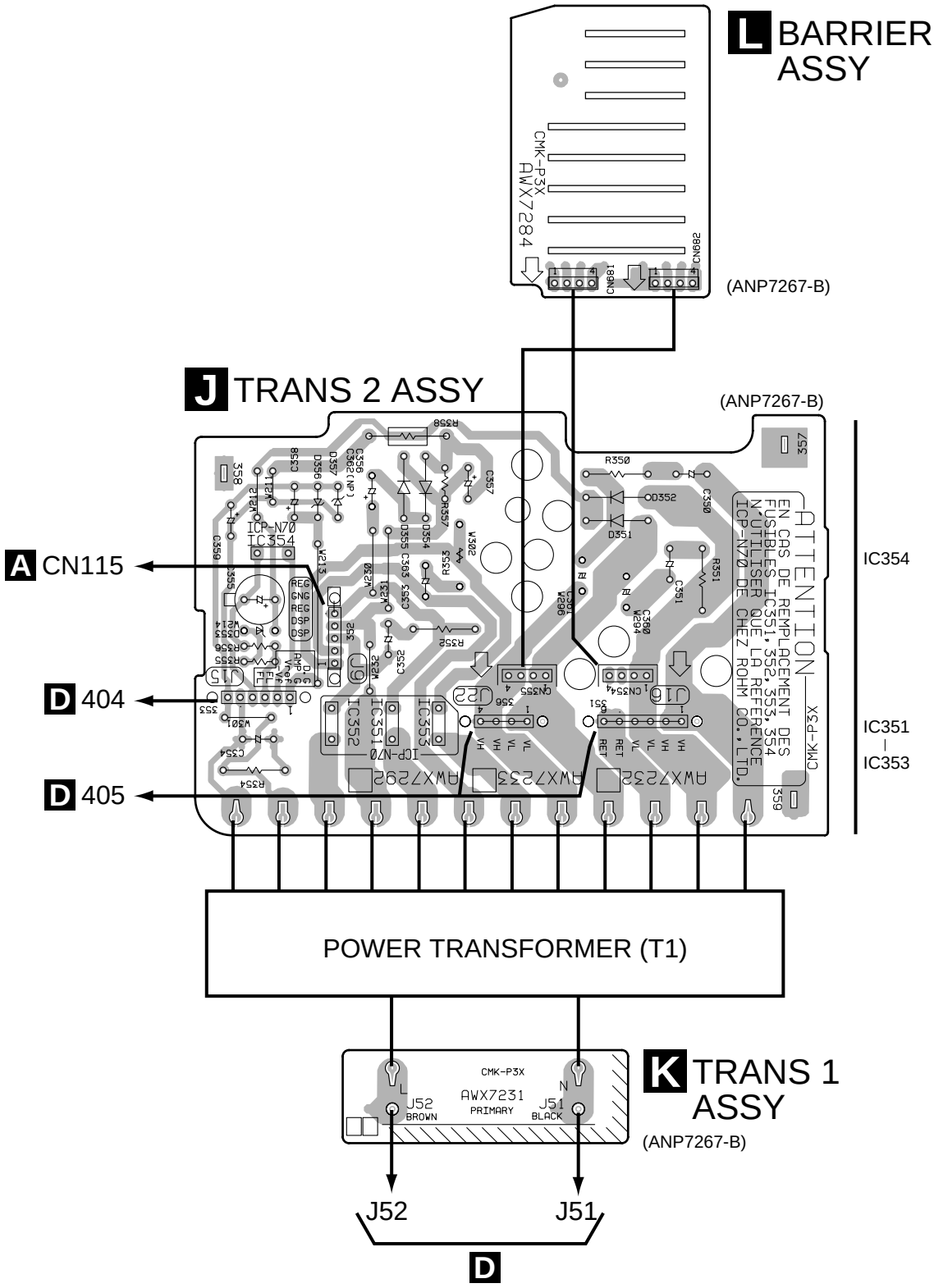
H REAR SP ASSY

H REAR SP ASSY

SIDE B

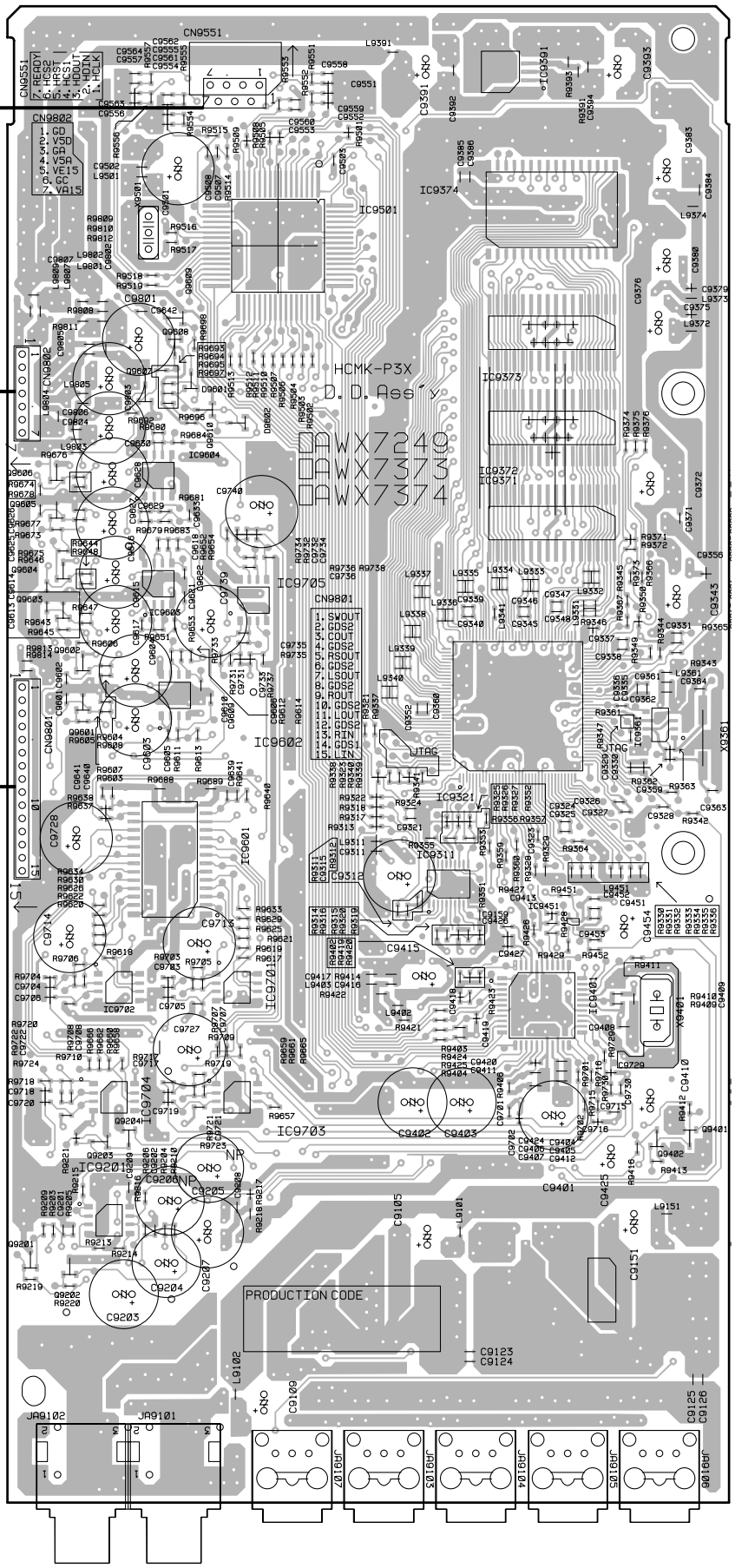
SIDE A

4.5 TRANS 2, TRANS 1 and BARRIER ASSEMBLIES



SIDE A

4.6 DOLBY DIGITAL ASSY

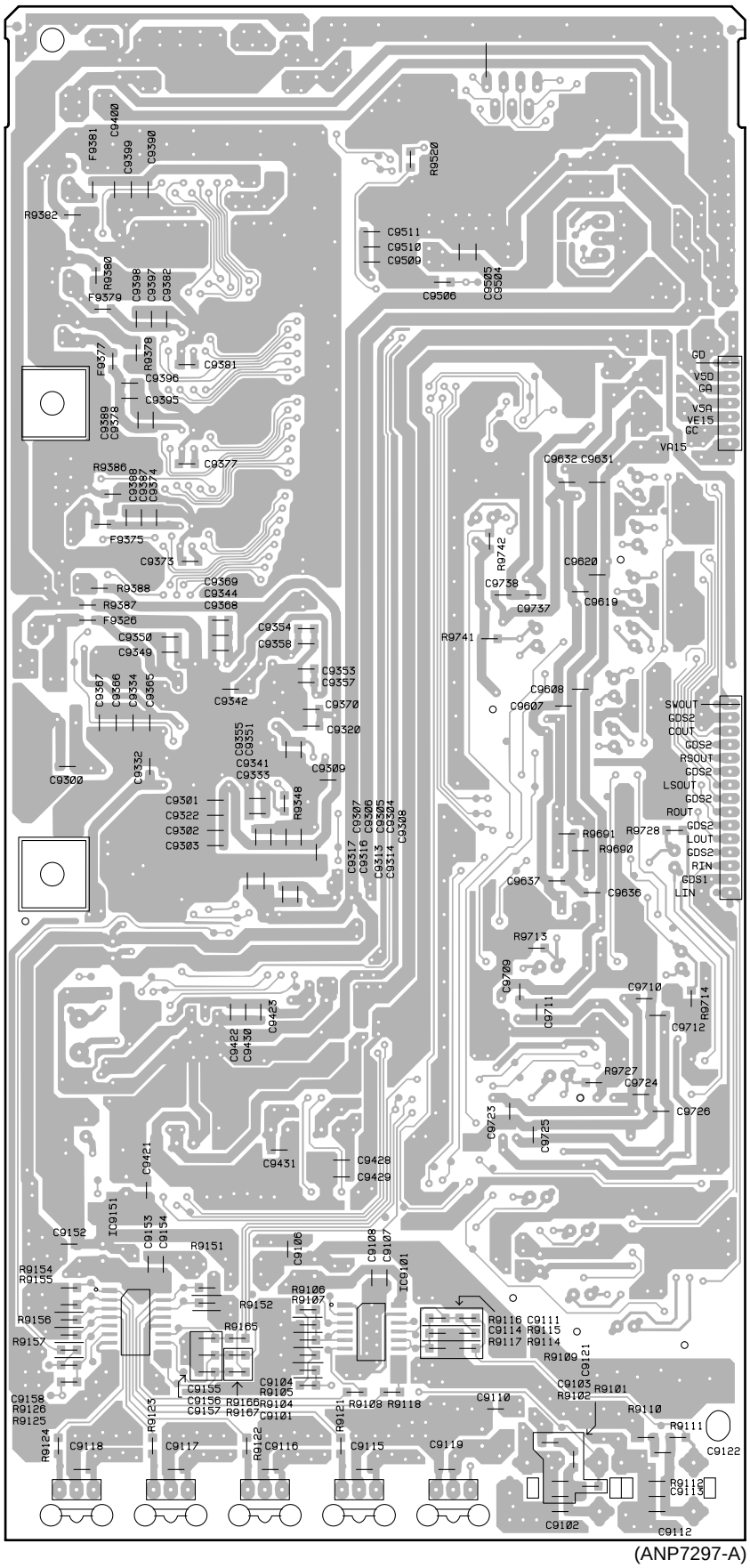


(ANP7297-A)

SIDE A

DOLBY DIGITAL ASSY

DOLBY DIGITAL ASSY

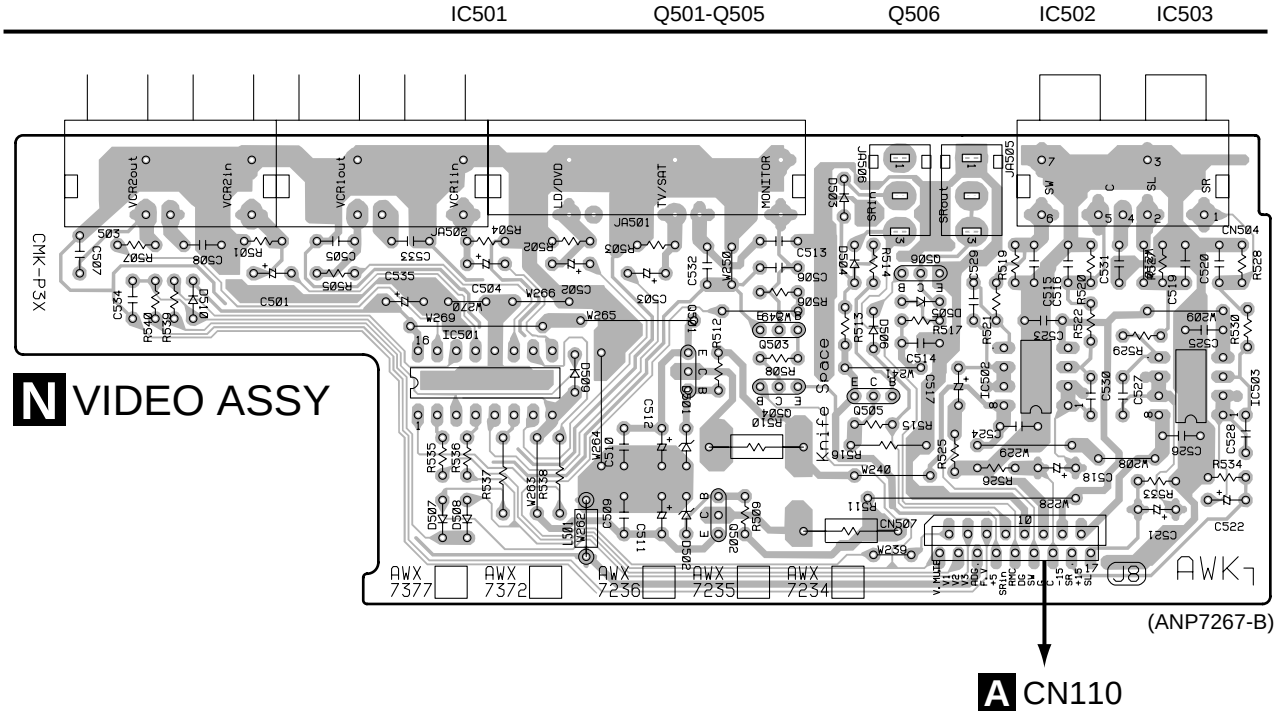


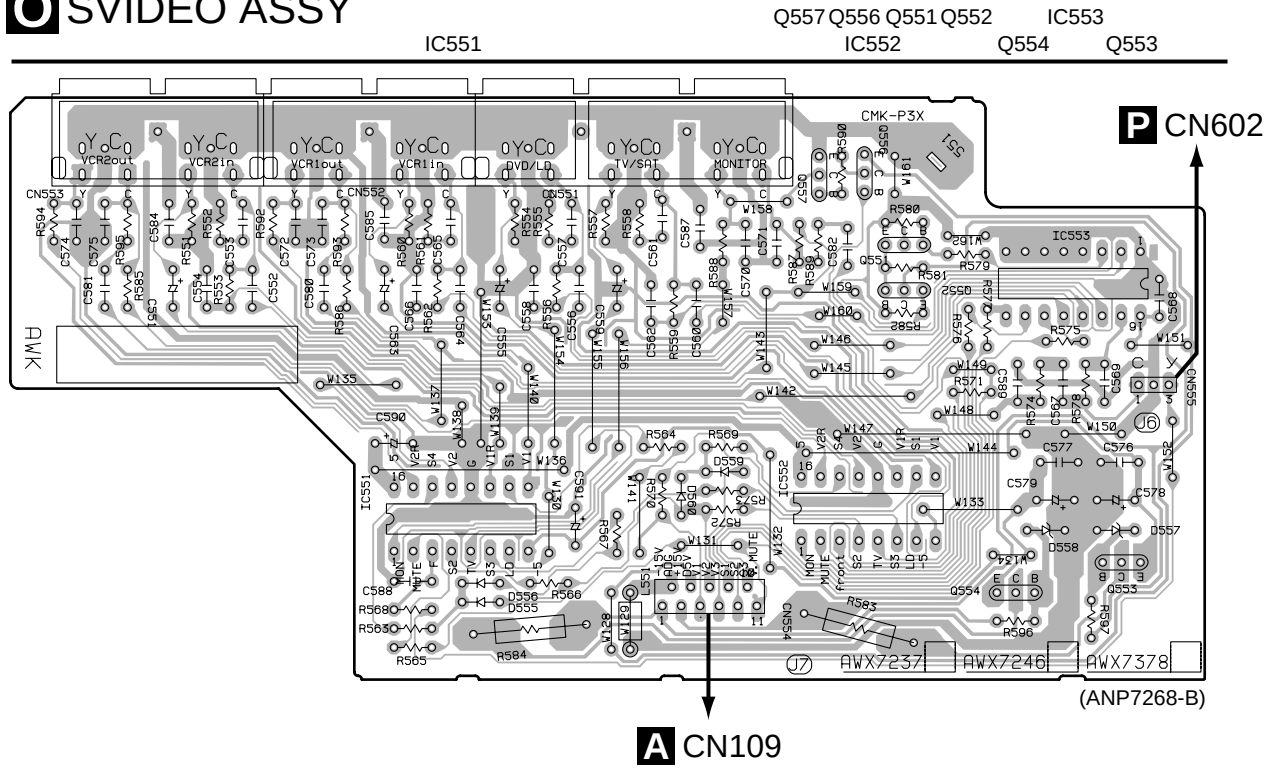
IC9151 IC9101

SIDE B

(ANP7297-A)

4.7 VIDEO and SVIDEO ASSEMBLIES





SIDE A

5. PCB PARTS LIST

NOTES: ●*Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
●*The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
●*When ordering resistors, first convert resistance values into code form as shown in the following examples.*
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).
560 Ω → 56 × 10¹ → 561 ..... RD1/4PU [5][6][1] J
47k Ω → 47 × 10³ → 473 ..... RD1/4PU [4][7][3] J
0.5 Ω → R50 ..... RN2H [R][5][0] K
1 Ω → 1R0 ..... RS1P [1][R][0] K
Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
5.62k Ω → 562 × 10¹ → 5621 ..... RN1/4PC [5][6][2][1] F

■ LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	Part No. VSX-D608 KUXJI Type	Part No. VSX-D608 KCXJI Type	Remarks
NSP	INPUT ASSY	AWK7472	AWK7472	
	├ INPUT ASSY	AWX7209	AWX7209	
	├ FRONT ASSY	AWX7215	AWX7215	
NSP	├ POWER SW ASSY	AWX7222	AWX7222	
NSP	└ REAR SP ASSY	AWX7250	AWX7250	
NSP	AMP ASSY	AWK7480	AWK7502	
	├ AMP ASSY	AWX7223	AWX7331	
NSP	├ FET ASSY	AWX7228	AWX7228	
NSP	├ HEADPHONE ASSY	AWX7229	AWX7229	
	├ TRANS 1 ASSY	AWX7231	AWX7231	
	├ TRANS 2 ASSY	AWX7232	AWX7232	
	├ VIDEO ASSY	AWX7235	AWX7235	
NSP	├ FRONT VIDEO ASSY	AWX7371	AWX7371	
	├ BARRIER ASSY	AWX7284	AWX7284	
NSP	├ F.SP.CONNECT ASSY	AWX7285	AWX7285	
NSP	└ R.C.SP.CONNECT ASSY	AWX7286	AWX7286	
NSP	EXCELLENT ASSY	AWK7485	AWK7485	
	├ SVIDEO ASSY	AWX7237	AWX7237	
	└ FRONT LARGE ASSY	AWX7288	AWX7288	
	DOLBY DIGITAL ASSY	AWX7373	AWX7373	

Mark	No.	Description	Part No.
A		**INPUT ASSY**	
		SEMICONDUCTORS	
	IC102,IC103		LC4966
	IC301-IC303		LC7536M
⚠	IC107,IC108		NJM7805FA
⚠	IC106		NJM78M12FA
⚠	IC104		NJM78M15FA
⚠	IC105		NJM79M15FA
	IC101		TC9274N-001
	IC109,IC304-IC310		UPC4570G2
	Q101,Q104		2SC1740S
	Q1351		2SC2878
	Q105		KRA101M
	Q103		KRA103M
	Q102,Q106		KRC103M
	D109		1SS355
	D101-D108		S5566G(TPB2)
	D110		UDZS5.1B
		CAPACITORS	
	C131-C133		CCSQCH101J50
	C300,C301,C322,C323		CCSQCH102J50
	C344,C345		CCSQCH102J50
	C316,C340,C341		CCSQCH121J50
	C1316,C1319,C1322		CCSQCH561J50
	C1312,C1313		CCSQCH680J50
	C1300,C1301,C153,C306,C307		CEAT100M50
	C328,C329		CEAT100M50
	C137,C138		CEAT101M10
	C147		CEAT101M16
	C134-C136		CEAT101M25
	C1302,C1303,C304,C305		CEAT1R0M50
	C308,C309,C326,C327		CEAT1R0M50
	C330,C331,C348,C349		CEAT1R0M50
	C145		CEAT222M35
	C127,C128		CEAT2R2M50
	C146		CEAT332M16
	C144		CEAT332M35
	C1314,C1315,C320,C321		CEAT470M25
	C342,C343		CEAT470M25

Mark	No.	Description	Part No.
	C142		CEAT470M35
	C129,C130,C1352,C1354		CEAT4R7M50
	C1351		CKSQYB102K50
	C1306,C1307,C1310,C1311		CKSQYB103K50
	C1355,C1356,C139-C141,C143		CKSQYB103K50
	C148-C151,C154,C156,C157		CKSQYB103K50
	C312,C313,C318,C319		CKSQYB103K50
	C334,C335,C338,C339		CKSQYB103K50
	C155		CKSQYB104K16
	C1353		CKSQYB222K50
	C302,C303,C324,C325		CKSQYB683K25
	C346,C347		CKSQYB683K25
RESISTORS			
	All Resistors		RS1/10S□□□J
OTHERS			
	CN109	11P FFC CONNECTOR	52045-1145
	CN114	13P FFC CONNECTOR	52045-1345
	CN110	17P FFC CONNECTOR	52045-1745
	CN111	26P FFC CONNECTOR	52045-2645
	CN115	5P JUMPER CONNECTOR	52147-0510
	CN112	14P JUMPER CONNECTOR	52147-1410
	CN104	6P PIN JACK	AKB7015
	JA101-JA103	6P PIN JACK	AKB7113
	CN105	KR CONNECTOR	B5B-PH-K-S
	CN108	15P PLUG	KM200TA15
	CN113	7P PLUG	KM200TA7
	120-122	PCB BINDER	VEF1040

B FRONT ASSY

SEMICONDUCTORS

	IC201	PDG232A
	Q201,Q202	2SA933S
	Q206,Q207	2SC1740S
	Q203-Q205	KRC101M
	D201-D203,D205-D221	1SS355
	D225,D226,D229	1SS355
	D227,D228	UDZS5.1B

COIL

	L201	LFA2R2J

SWITCHES

	S201-S203,S205-S214	ASG1034
	S217-S224,S229-S231	ASG1034
	S233-S235	ASG1034
	S250	ASX7004

CAPACITORS

	C204 (0.047F/5.5V)	ACH7017
	C220-C222	CCSQCH101J50
	C217	CCSQCH102J50
	C206,C208	CEAT2R2M50
	C212	CEAT470M25
	C205	CEAT470M50
	C202	CEAT471M6R3
	C227	CEJA221M6R3
	C201,C203,C211	CKSQYB103K50
	C214	CKSQYB104K25
	C209,C210	CKSQYB473K50
	C207	CKSQYF104Z25

Mark	No.	Description	Part No.
RESISTORS			
	R230		RA8T103J
	R225		RA9T104J
	Other Resistors		RS1/10S□□□J
OTHERS			
	X201	CERAMIC RESONATOR (7.7MHz)	ASS1055
	204	4P CABLE HOLDER	51063-0405
	CN201	15P FFC CONNECTOR	52044-0745
	CN203	21P FFC CONNECTOR	52045-2145
	CN202	26P FFC CONNECTOR	52045-2645
	V201	FL TUBE	AAV7062
	201	REMOTE RECEIVER UNIT	GP1U27X

C POWER SW ASSY

SEMICONDUCTOR

	D291	BR3371XJ30A

SWITCH

	S291	ASG1034

RESISTORS

	All Resistors	RS1/10S□□□J

OTHERS

	291	4P CABLE HOLDER	51063-0405

D AMP ASSY

(1) CONTRAST TABLE

AWX7223 and AWX7331 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		AWX7223	AWX7331	
	H751, H752 FUSE CLIP	Not used	AKR1004	

(2) PARTS LIST FOR AWX7223

SEMICONDUCTORS

⚠	IC404,IC405	ICP-N25
	IC711	NJM4558D-D
⚠	IC701	NJM78M56FA
⚠	IC401,IC402	PAC007A
⚠	IC403	PAC008A
	Q712	2SA992
	Q1404,Q1405	2SC1740S
	Q711	2SC1845
	Q1402,Q403,Q404,Q453,Q454	2SC2240
	Q405,Q406,Q455,Q456	2SC2705
	Q1401,Q1403,Q1434,Q401,Q402	2SC2878
	Q407,Q408,Q451,Q452	2SC2878
	Q457,Q458	2SC2878
	Q1436,Q714	KRA103M
	Q1435,Q701	KRC101M
	Q713,Q715	KRC103M
	D1401,D1403-D1405,D1435	1SS133
	D401,D402,D405-D412	1SS133
	D451,D452,D455-D462	1SS133
	D703,D704,D715,D716	1SS133

Mark	No.	Description	Part No.
⚠	D711,D712		D5SBA20
	D713,D714		MTZJ18B
	D701		MTZJ5.1A
	D702		S5688G
COILS			
⚠	L701	LINE FILTER	ATF7018
	L1432,L1433	AF CHOKE COIL	ATH1004
SWITCH AND RELAYS			
	S701		ASH7002
⚠	RY401		ASR7001
⚠	RY701		ASR7016
CAPACITORS			
⚠	C711,C712 (0.01µF/AC250V)		ACG1005
⚠	C704,C705 (10000pF/AC250V)		ACG7020
	C715,C716 (8200µF/71V)		ACH7018
	C1408,C1410		CCCSL101K2H
	C1420		CCCSL180J50
	C1411,C415,C416,C465,C466		CCCSL221J50
	C437,C438,C479,C480		CCCSL470J50
	C1403,C1404,C405,C406		CEANP2R2M2A
	C455,C456		CEANP2R2M2A
	C1415,C423,C424,C473,C474		CEANP2R2M50
	C436,C486		CEAT101M10
	C412,C461,C462		CEAT101M25
	C713,C714		CEAT101M2A
	C702		CEAT102M25
	C414,C463,C464,C490		CEAT1R0M50
	C717,C718		CEAT1R0M50
	C1419		CEAT221M10
	C701		CEAT470M25
	C1413,C1414,C421,C422		CEAT4R7M2A
	C471,C472		CEAT4R7M2A
	C403,C404,C453,C454,C719		CEAT4R7M50
	C1405,C411		CEHAQ101M25
	C413		CEHAQ1R0M50
	C1402		CEHAQ4R7M50
	C1416,C427,C428,C475,C476		CFTLA334J50
	C1432,C1433		CFTYA104J50
	C1440		CGCYX104M25
	C1417,C1418,C429,C430		CKCYB102K50
	C477,C478		CKCYB102K50
	C1401,C401,C402,C451,C452		CKCYB331K50
	C1412		CKCYB471K2H
	C1407,C1409		CKCYB471K50
	C703,C706,C707		CKCYF103Z50
RESISTORS			
⚠	R1412,R423,R424,R473,R474	(0.22Ω, 5W)	ACN7094
⚠	R704	(2.2MΩ, 1/2W)	RCN1080
⚠	R703		RD1/2PM270J
⚠	R1409,R1410,R415,R416		RD1/4MUF331J
⚠	R465,R466		RD1/4MUF331J
⚠	R419,R420,R469,R470		RD1/4MUF820J
⚠	R1432,R1433		RD1/4PMF4R7J
⚠	R1436,R1437		RS1LMF4R7J
⚠	R1448		RS1LMF561J
	Other Resistors		RD1/4PU□□□J

Mark	No.	Description	Part No.
OTHERS			
	409	5P CABLE HOLDER	51048-0500
	404	6P CABLE HOLDER	51048-0600
	408	12P CABLE HOLDER	51048-1200
	402	13P CABLE HOLDER	51048-1300
	405,407	10P CABLE HOLDER	51052-1000
	CN401	21P FFC CONNECTOR	52045-2145
	JA413	1P PIN JACK	AKB7111
⚠	701	AC OUTLET 1P	AKP1060
	H701-H704	FUSE CLIP	AKR1004
	1,2	HEAT SINK B	ANH1021
⚠	T701	POWER TRANSFORMER	ATT1223
	J14	JUMPER WIRE 5P	D20PYY0520E
	J10	JUMPER WIRE 14P	D20PYY1415E
	J18	BOARD IN WIRE	DB020ND0
	J19	BOARD IN WIRE	DB925ND0
	CN701	AC CORD SOCKET	RKP1751
	401,403,411,412	PCB BINDER	VEF1040
	KN704	EARTH METAL FITTING	VNF1084

E F.SP. CONNECT ASSY

Mark	No.	Description	Part No.
OTHERS			
	686	13P CABLE HOLDER	51048-1300

F R.C.SP. CONNECT ASSY

Mark	No.	Description	Part No.
OTHERS			
	691	12P CABLE HOLDER	51048-1200

G FRONT LARGE ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	Q626-Q628		KRA103M
	Q629-Q631		KRC101M
	D626-D628		1SS133
COILS			
	L627,L628	AF CHOKE COIL	ATH1004
RELAYS			
⚠	RY626-RY628		ASR7001
CAPACITORS			
	C627,C628		CFTYA104J50
RESISTORS			
⚠	R629,R630		RD1/4LMF4R7J
⚠	R631,R632		RS1LMF4R7J
⚠	R626-R628		RS1LMF561J
OTHERS			
	CN627	8P SPEAKER TERMINAL	AKE7036
	CN626	13P PLUG	AKM7006

Mark	No.	Description	Part No.

H REAR SP ASSY

SEMICONDUCTORS

	Q652		2SC1740S
	Q651		KRA101M
	D651,D652		1SS355

COIL

	L651	AF CHOKE COIL	ATH1004

RELAYS

⚠	RY651,RY652		ASR7001

CAPACITOR

	C651		CFTYA104J50

RESISTORS

⚠	R652		RD1/4LMF4R7J
⚠	R657		RS1LMF4R7J
⚠	R651		RS2LMF271J
	Other Resistors		RS1/10S□□□J

OTHERS

	JA653	1P PIN JACK	AKB7111
	CN652	SPEAKER TERMINAL 6P	AKE7041
	CN651	12P PLUG	AKM7007

I HEADPHONE ASSY

RESISTORS

⚠	R1461,R1462		RS3LMF331J

OTHERS

	JA1461	HEADPHONE JACK	RKB1014

J TRANS 2 ASSY

SEMICONDUCTORS

⚠	IC351-IC354		ICP-N70
	D356		MTZJ20A
	D357		MTZJ9.1B
	D351,D352,D354,D355		S5688G

CAPACITORS

	C359		CEAT101M10
	C358		CEAT101M35
	C356		CEAT470M25
	C355,C357		CEAT470M50

RESISTORS

⚠	R358		RS1LMF182J
	Other Resistors		RD1/4PU□□□J

OTHERS

	352	5P CABLE HOLDER	51048-0500
	353	6P CABLE HOLDER	51048-0600
	356	4P CABLE HOLDER	51052-0400
	351	6P CABLE HOLDER	51052-0600
	J9	JUMPER WIRE 5P	D20PYY0545E
	CN354,CN355	4P PLUG	KM200TA4
	357,358	PCB BINDER	VEF1040

Mark	No.	Description	Part No.

K TRANS 1 ASSY

OTHERS

	J51	LEAD WIRE UNIT	DB035NB0
	J52	LEAD WIRE UNIT	DB135NB0

L BARRIER ASSY

OTHERS

	CN681,CN682	4P SOCKET	KP200TA4L

M FET ASSY

SEMICONDUCTORS

⚠	Q1452		IRF540A
⚠	Q1451		IRF9540A

RESISTORS

⚠	R1451,R1452		RD1/4PMF101J
	Other Resistors		RD1/4PM□□□J

OTHERS

	1451	10P CABLE HOLDER	51052-1000

N VIDEO ASSY

SEMICONDUCTORS

	IC501		NJM2296D
	IC502,IC503		NJM4558D-D
	Q502		2SA1515
	Q505		2SA933S
	Q501		2SC3377
	Q506		KRC103M
	D503,D505-D510		1SS133
	D501,D502		MTZJ6.2B

CAPACITORS

	C505-C507		CCCSL221J50
	C501-C504,C511,C512,C535		CEAT470M25
	C517,C518,C521,C522		CEAT4R7M50
	C509,C510		CGCYX473M25
	C508,C513,C514,C523-C526		CKCYF103Z50
	C531-C533		CKCYF103Z50

RESISTORS

⚠	R510,R511		RS1LMF151J
	Other Resistors		RD1/4PU□□□J

OTHERS

	CN507	17P FFC CONNECTOR	52045-1745
	502,503	2P PIN JACK	AKB7017
	JA501	3P PIN JACK	AKB7056
	CN504	4P PIN JACK	AKB7087
	JA505,JA506	REMOTE CONTROL JACK	RKN1004

Mark	No.	Description	Part No.

O SVIDEO ASSY

SEMICONDUCTORS

	IC551,IC552		NJM2296D
	IC553		TC4051BP
	Q554		2SA1515
	Q551		2SA933S
	Q552		2SC1740S
	Q553		2SC3377
	D555,D556,D559,D560		1SS133
	D557,D558		MTZJ6.2B

CAPACITORS

	C570-C575		CCCSL221J50
	C578,C579		CEAT470M10
	C551,C555,C559,C563		CEAT470M25
	C590,C591		CEAT470M25
	C552,C556,C560,C564,C567		CGCYX104M16
	C580-C582		CGCYX104M16
	C553,C557,C561,C565		CGCYX473M16
	C576,C577		CGCYX473M16
	C584,C585,C587		CKCYF103Z50
	C554,C558,C562,C566		CKPUYY103M16
	C568,C569		CKPUYY103M16

RESISTORS

⚠	R583,R584		RS2LMF101J
	Other Resistors		RD1/4PU□□□J

OTHERS

	CN554	11P FFC CONNECTOR	52044-1145
	CN552,CN553	4P MINI DIN SOCKET	AKP7020
	CN551	4P MINI DIN SOCKET	AKP7043
	CN555	KR CONNECTOR 3P	B3B-PH-K-S

P FRONT VIDEO ASSY

CAPACITORS

	C604,C608		CEAT470M25
	C605-C607		CGCYX104M25
	C603		CGCYX473M25
	C609,C610		CKCYB471K50
	C611,C612		CKCYF103Z50

RESISTORS

	All Resistors		RD1/4PU□□□J

OTHERS

	CN601	FRONT PIN JACK	AKX7007
	601	PCB BINDER	VEF1040

Mark	No.	Description	Part No.

Q DOLBY DIGITAL ASSY

SEMICONDUCTORS

	IC9401		CS4226-KQ
	IC9371		KM68V1002AJ-15
	IC9201		NJM2100M
	IC9602-IC9604,IC9701-IC9705		NJM4558MD
	IC9501		PD5501B
	IC9374		PDK038A
⚠	IC9391		PQ20WZ51
	IC9151		TC74ACT151AF
	IC9101		TC74HCU04AF
	IC9311		TC74VHCT244AFT
	IC9451		TC7SH08FU
	IC9361		TC7WU04F
	IC9601		TC9164AF
	IC9321		XCC56362PV100
	Q9201,Q9202,Q9601-Q9606		2SC3326
	Q9203,Q9402,Q9607,Q9609,Q9610		DTA124EK
	Q9204,Q9401,Q9608		DTC124EK
	D9601,D9602		1SS181

COILS AND FILTERS

	L9391,L9501,L9807,L9809	CHIP FERRITE BEAD	ATL7002
	F9326,F9375,F9381	CHIP BEAD	DTF1064
	L9101,L9102,L9151,L9311,L9361	CHIP SOLID INDUCTOR	QTL1013
	L9402,L9403,L9451,L9801-L9805	CHIP SOLID INDUCTOR	QTL1013

CAPACITORS

	C9334,C9365		CCSQCH100D50
	C9341,C9349,C9355,C9357,C9358		CCSQCH101J50
	C9373		CCSQCH101J50
	C9300,C9301,C9304-C9307,C9309		CCSQCH221J50
	C9314,C9316,C9366,C9368		CCSQCH221J50
	C9387,C9388,C9390,C9399,C9400		CCSQCH221J50
	C9422,C9428,C9429		CCSQCH221J50
	C9108,C9154,C9505		CCSQCH271J50
	C9127		CCSQCH471J50
	C9104		CCSQCH560J50
	C9159,C9201,C9202,C9324,C9326		CCSRCH101J50
	C9329,C9336,C9338,C9340,C9345		CCSRCH101J50
	C9348,C9386		CCSRCH101J50
	C9736		CCSRCH102J50
	C9363,C9364		CCSRCH150J50
	C9420,C9707,C9708,C9721,C9722		CCSRCH151J50
	C9735		CCSRCH151J50
	C9408,C9409		CCSRCH180J50
	C9360,C9405,C9424,C9554		CCSRCH221J50
	C9609,C9610,C9621,C9622		CCSRCH221J50
	C9362,C9629		CCSRCH271J50
	C9411,C9426,C9427,C9452,C9508		CCSRCH471J50
	C9601,C9602,C9605,C9606		CCSRCH471J50
	C9613,C9614,C9617,C9618,C9625		CCSRCH471J50
	C9639		CCSRCH471J50
	C9105,C9109,C9151,C9312,C9372		CEJA101M10
	C9383,C9393,C9402,C9501,C9801		CEJA101M10
	C9410		CEJA1R0M50
	C9713,C9714,C9727,C9728		CEJA220M25
	C9739,C9740,C9803,C9805		CEJA220M25

Mark	No.	Description	Part No.
	C9207,C9343		CEJA221M6R3
	C9203,C9204,C9391,C9401,C9415		CEJA4R7M50
	C9454,C9603,C9604,C9615,C9616		CEJA4R7M50
	C9627,C9628		CEJA4R7M50
	C9205,C9206		CEJANP100M10
	C9103		CKSQYB102K50
	C9101,C9107,C9153,C9313,C9322		CKSQYB103K50
	C9332,C9333,C9342,C9344		CKSQYB103K50
	C9350,C9351,C9353,C9354,C9367		CKSQYB103K50
	C9374,C9636,C9637		CKSQYB103K50
	C9158,C9504		CKSQYB104K16
	C9407		CKSQYB224K16
	C9330		CKSQYB474K16
	C9430		CKSQYF103Z50
	C9102,C9115-C9117,C9119,C9421		CKSQYF104Z25
	C9423,C9431,C9607,C9608		CKSQYF104Z25
	C9619,C9620,C9631,C9632		CKSQYF104Z25
	C9709-C9712,C9723-C9726		CKSQYF104Z25
	C9737,C9738		CKSQYF104Z25
	C9323,C9325,C9327,C9335,C9337		CKSRYB103K50
	C9339,C9346,C9347,C9352,C9361		CKSRYB103K50
	C9385,C9626,C9642		CKSRYB103K50
	C9705,C9706,C9719,C9720		CKSRYB104K16
	C9733,C9734		CKSRYB104K16
	C9633		CKSRYB122K50
	C9703,C9704,C9717,C9718,C9731		CKSRYB222K50
	C9406		CKSRYB223K50
	C9359		CKSRYB562K50
	C9701,C9702,C9715,C9716,C9729		CKSRYB682K50
	C9732		CKSRYB682K50
	C9123,C9125,C9451		CKSRYF103Z50
	C9208,C9209,C9404,C9807		CKSRYF104Z16

RESISTORS

	R9103,R9109,R9115,R9151,R9157		RS1/10S0R0J
	R9377-R9380,R9382,R9386-R9388		RS1/10S0R0J
	R9520,R9690		RS1/10S0R0J
	R9108,R9121-R9123,R9125,R9126		RS1/10S101J
	R9165-R9167		RS1/10S102J
	R9107		RS1/10S222J
	R9106,R9348,R9521,R9713,R9714		RS1/10S473J
	R9727,R9728,R9741,R9742		RS1/10S473J
	R9101		RS1/10S750J
	Other Resistors		RS1/16S□□□J

OTHERS

	X9501	CERAMIC RESONATOR (7.7MHz)	ASS1055
	X9361	CRYSTAL RESONATOR (20.000MHz)	ASS7023
	X9401	CRYSTAL RESONATOR (18.432MHz)	RSS1052
	CN9551	7P FFC CONNECTOR	52044-0745
	JA9103-JA9105	OPTICAL RECEIVE MODULE	GP1F32R
	JA9107	OPTICAL SEND MODULE	GP1F32T
	CN9801	15P SOCKET	KP200TA15L
	CN9802	7P SOCKET	KP200TA7L
	JA9101	1P PIN JACK (NI, BL)	VKB1077

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 PARTS

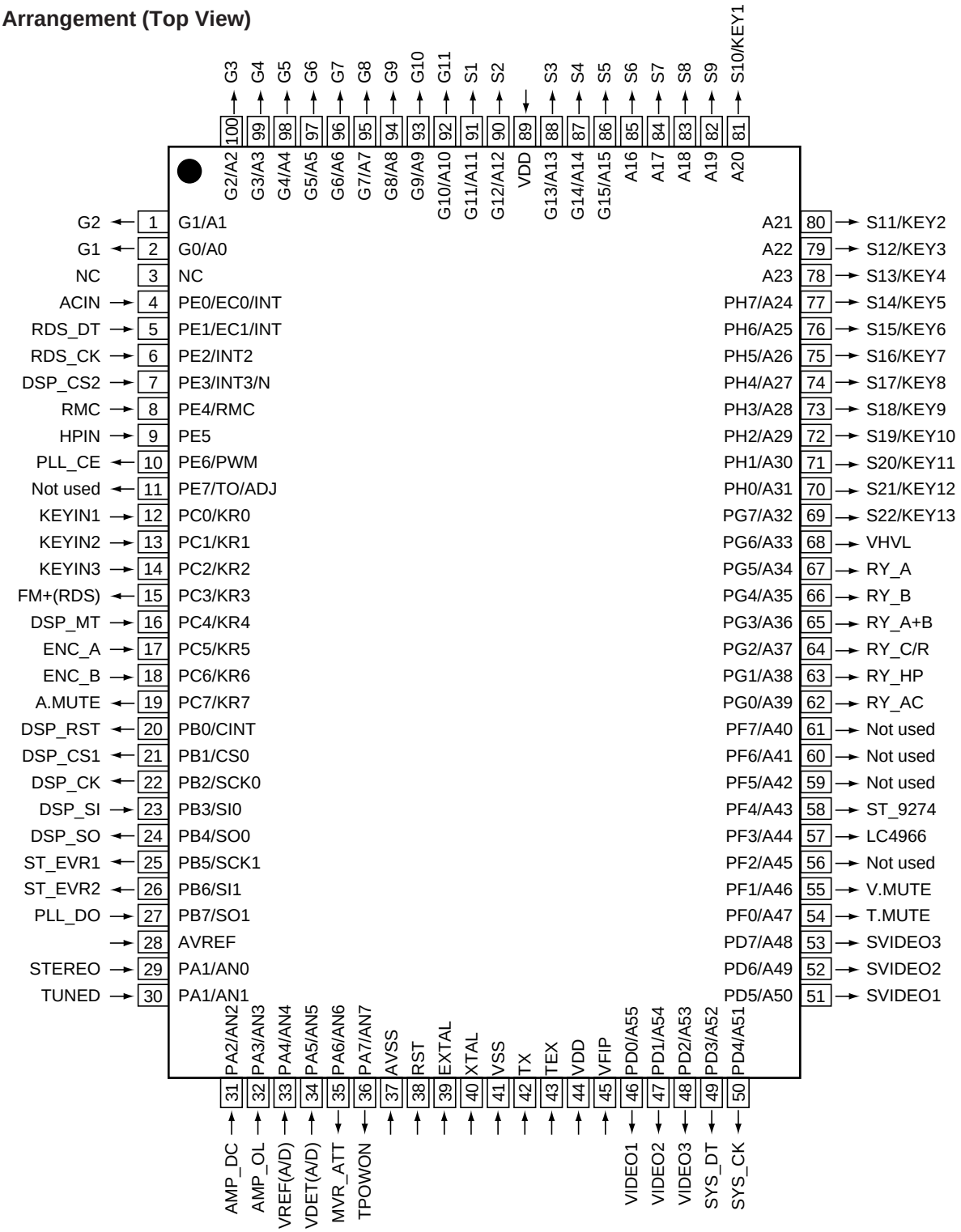
7.1.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ PDG232A (FRONT ASSY : IC201)

• System Control Microcomputer

●Pin Arrangement (Top View)



●Pin Function

No.	Pin Name	I/O	Pin Function	Active
1	G2	O	Grid output 2	H
2	G1	O	Grid output 1	H
3	NC	–	Connect to VDD	
4	ACIN	I	AC pulse input	
5	RDS_DT	I	Serial control data signal for DSP communication	
6	RDS_CK	I	Serial control clock signal for DSP communication (used for external interrupt)	
7	DSP_CS2	I	CS input from DSP microcomputer	
8	RMC	I	Remote control signal input (no-carrier signal)	
9	HPIN	I	Headphone connection detection (H : connect)	
10	PLL_CE	O	Chip select signal for communication with LC72131 (tuner)	H
11	Not used	O	Open	
12	KEYIN1	I	Key scan input 1	
13	KEYIN2	I	Key scan input 2	
14	KEYIN3	I	Key scan input 3	
15	FM+(RDS)	O	Tr switch ON/OFF for power supply of RDS decoder (L : AM power off, H : others)	H
16	DSP_MT	I	Mute requirement from DSP microcomputer (H : Mute requirement)	H
17	ENC_A	I	Rotary encoder signal input A	
18	ENC_B	I	Rotary encoder signal input B	
19	AMUTE	O	Audio mute	L
20	DSP_RST	O	Reset signal of DSP microcomputer	L
21	DSP_CS1	O	CS output to DSP microcomputer	L
22	DSP_CK	O	Clock signal for communication with DSP microcomputer	H
23	DSP_SI	I	Data input signal for communication with DSP microcomputer	
24	DSP_SO	O	Data output signal for communication with DSP microcomputer	H
25	ST_EVR1	O	Strobe 1 for electric volume LC7535M	H
26	ST_EVR2	O	Strobe 2 for electric volume LC7535M	H
27	PLL_DO	I	Data input signal for communication with LC72131 (tuner)	
28	AVref	–	Connect to VDD	
29	STEREO	I	Stereo/Monoral signal judgment signal	
30	TUNED	I	TUNED information	
31	AMP_DC	I	DC abnormality detection of protection circuit (L : Abnormality detection)	
32	AMP_OL	I	Over-load detection of protection circuit (L : Abnormality detection)	
33	VREF	I	Reference value (A/D) for detecting the AMP input signal level for VH/VL switch	
34	VDET	I	AMP input signal level detection (A/D) for VH/VL switch	
35	MVR_ATT	O	ATT control of master volume (L : Less than -20dB)	L
36	TPOWON	O	Tuner module ON/OFF (North America model only)	H
37	AVSS	–	Connect to VSS	
38	RST	–	Reset	
39	EXTAL	–	Connect to the oscillator (8MHz)	
40	XTAL	–		
41	VSS	–	Connect to VSS	
42	TX	–	Open	
43	TEX	–	Connect to VSS	
44	VDD	–	+5V	
45	VFDP	–	-30V	
46	VIDEO1	O	NJM2296D control	H
47	VIDEO2			
48	VIDEO3			
49	SYS_DT	O	Clock signal for communication with LC7535M and TC9274N-001	H
50	SYS_CK			

No.	Pin Name	I/O	Pin Function	Active
51	SVIDEO1	O	TC4051 control (S terminal control)	H
52	SVIDEO2			
53	SVIDEO3			
54	TMUTE	O	Tuner mute	H
55	VMUTE	O	Video mute	L
56	Not used	O	Open	
57	LC4966	O	Input switch the DVD 6ch	H
58	ST_9174	O	Strobe signal for communication with TC9174	H
59	Not used	O	Open	
60	Not used	O	Open	
61	Not used	O	Open	
62	RY_AC	O	AC relay ON/OFF	H
63	RY_HP	O	Headphone relay ON/OFF	H
64	RY_C/R	O	Rear/Center relay ON/OFF	H
65	RY_A+B	O	Speaker A + B relay ON/OFF	H
66	RY_B	O	Speaker B relay ON/OFF	H
67	RY_A	O	Speaker A relay ON/OFF	H
68	VHVL	O	Power switch for AMP system (H : VH)	H
69	S22/KEY13	O	Segment output 22/key scan output 13	H
70	S21/KEY12		Segment output 21/key scan output 12	
71	S20/KEY11		Segment output 20/key scan output 11	
72	S19/KEY10		Segment output 19/key scan output 10	
73	S18/KEY9		Segment output 18/key scan output 9	
74	S17/KEY8		Segment output 17/key scan output 8	
75	S16/KEY7		Segment output 16/key scan output 7	
76	S15/KEY6		Segment output 15/key scan output 6	
77	S14/KEY5		Segment output 14/key scan output 5	
78	S13/KEY4		Segment output 13/key scan output 4	
79	S12/KEY3		Segment output 12/key scan output 3	
80	S11/KEY2		Segment output 11/key scan output 2	
81	S10/KEY1		Segment output 10/key scan output 1	
82	S9	O	Segment output 9	H
83	S8		Segment output 8	
84	S7		Segment output 7	
85	S6		Segment output 6	
86	S5		Segment output 5	
87	S4		Segment output 4	
88	S3		Segment output 3	
89	VDD	–	5V	
90	S2	O	Segment output 2	H
91	S1		Segment output 1	
92	G11		Grid output 11	
93	G10		Grid output 10	
94	G9		Grid output 9	
95	G8		Grid output 8	
96	G7		Grid output 7	
97	G6		Grid output 6	
98	G5		Grid output 5	
99	G4		Grid output 4	
100	G3		Grid output 3	

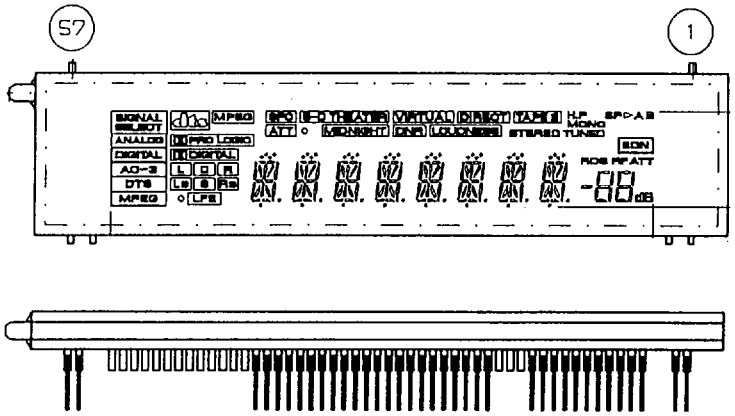
Note :• In the power off condition (with the remote control unit key or the main unit tact key), set to "L" excepting tuner mute (pin 54). However, it nothing is done against to the input port.
• When pin 10 and 11 detect "L" at the reset, be careful because it enter the microcomputer's own test mode.

7.1.2 DISPLAY

■ AAV7062 (FRONT ASSY : V201)

- **FL Indicator Tube**

• Pin Assignment



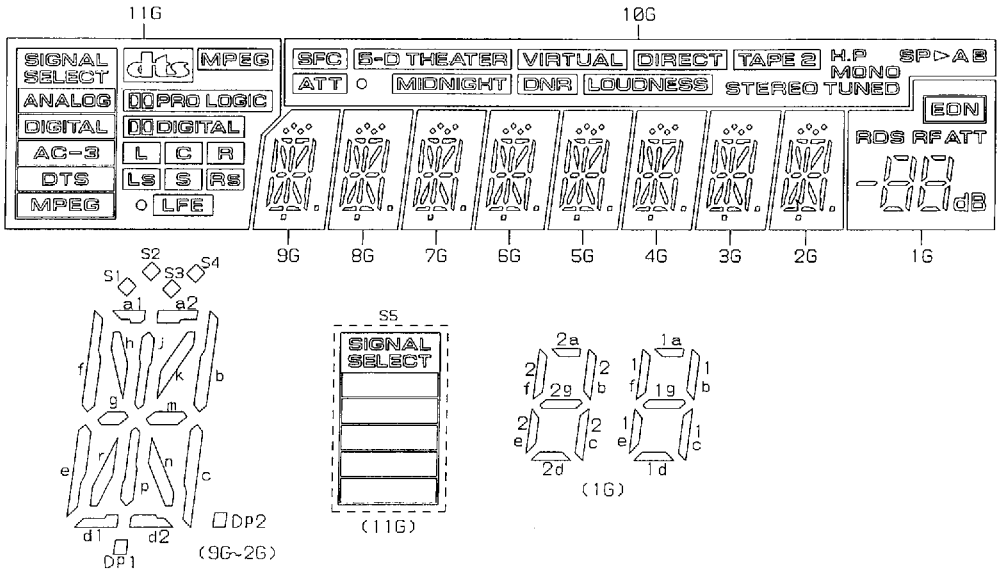
• Pin Connection

PIN NO.	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	P21	P20	P19	P18	P17	P16	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NX	NX	NX	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	F1	F1	F2	F2	NP	NP	NX	NX

PIN NO.	57	56	55	54	53	52	51
CONNECTION	F2	F2	NP	NP	NX	NX	NX

NOTE 1) F1,F2 --- Filament
2) NP ------ No Pin
3) NX ------ No extend Pin
4) DL ------ Datum Line
5) 1G~11G --- Grid

• Grid Assignment



- **Anode Connection**

	11G	10G	9G~2G	1G
P1	LFE	B	a1	dB
P2	○	A	a2	2a
P3	RS	SP ▷	h	2b
P4	S	H.P	j	2f
P5	LS	TUNED	k	2g
P6	R	MONO	b	2c
P7	C	STEREO	f	2e
P8	L	TAPE 2	m	2d
P9	DIGITAL	DIRECT	g	1a
P10	PRO LOGIC	LOUDNESS	c	1b
P11	MPEG	DNR	e	1f
P12	dts	VIRTUAL	r	1g
P13	MPEG	MIDNIGHT	p	1c
P14	DTS	5-D THEATER	n	1e
P15	AC-3	○	d1	1d
P16	DIGITAL	ATT	d2	▭
P17	ANALOG	SFC	Dp2	RDS
P18	S5	-	Dp1	RF ATT
P19	-	-	S1	EON
P20	-	-	S4	(EON)
P21	-	-	S2	-
P22	-	-	S3	-

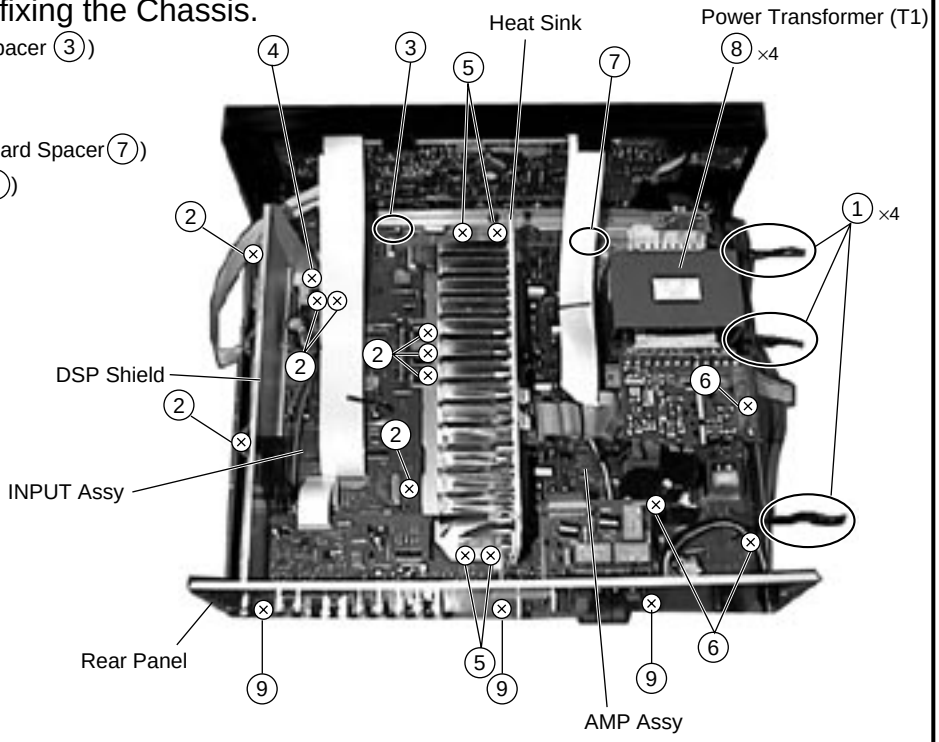
7.2 DISASSEMBLY

1 Remove the Bonnet. (seven screws)

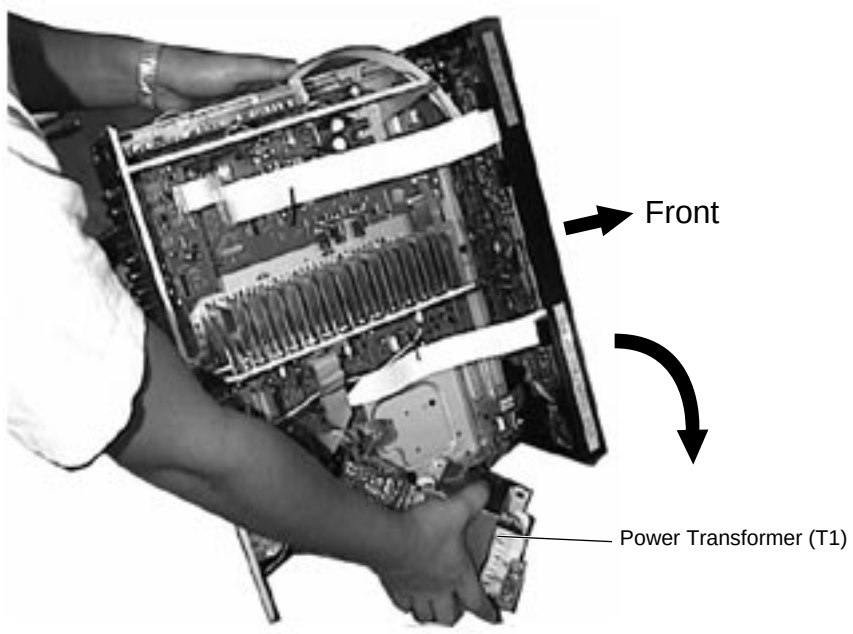
2 Release three binders (①) from the Power Transformer (T1).

3 Remove all screws which fixing the Chassis.

- INPUT Assy (eight screws ②, Card Spacer ③)
- DSP Shield (screw ④)
- Heat Sink (four screws ⑤)
- AMP Assy (three screws ⑥, Locking Card Spacer ⑦)
- Power Transformer (T1) (four screws ⑧)
- Rear Panel (three screws ⑨)

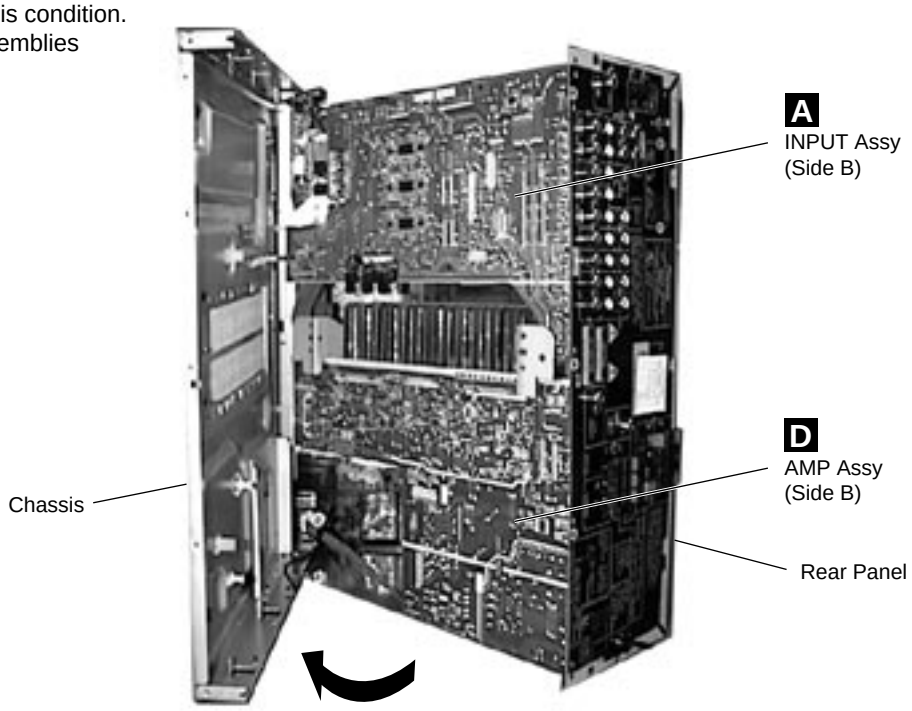


4 Put the Power Transformer on the bottom side, and stand the component sideways.

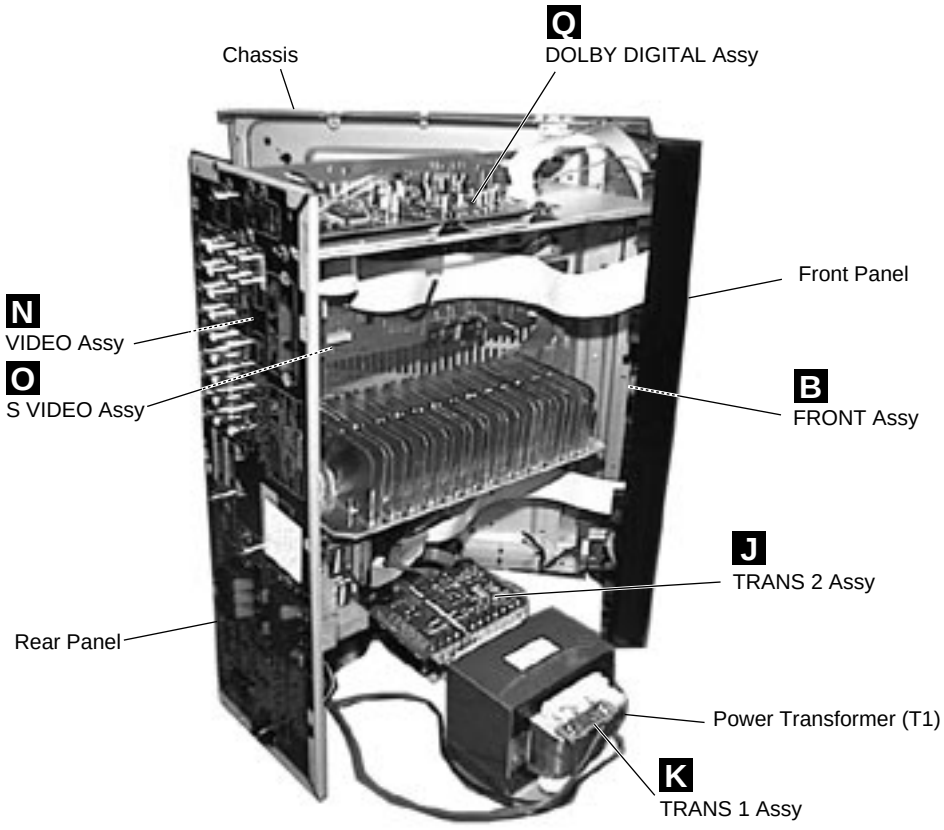


5 Open the Chassis and Rear Panel

It can be disgnosed under this condition.
Show the principal PCB Assemblies
in the illustration.

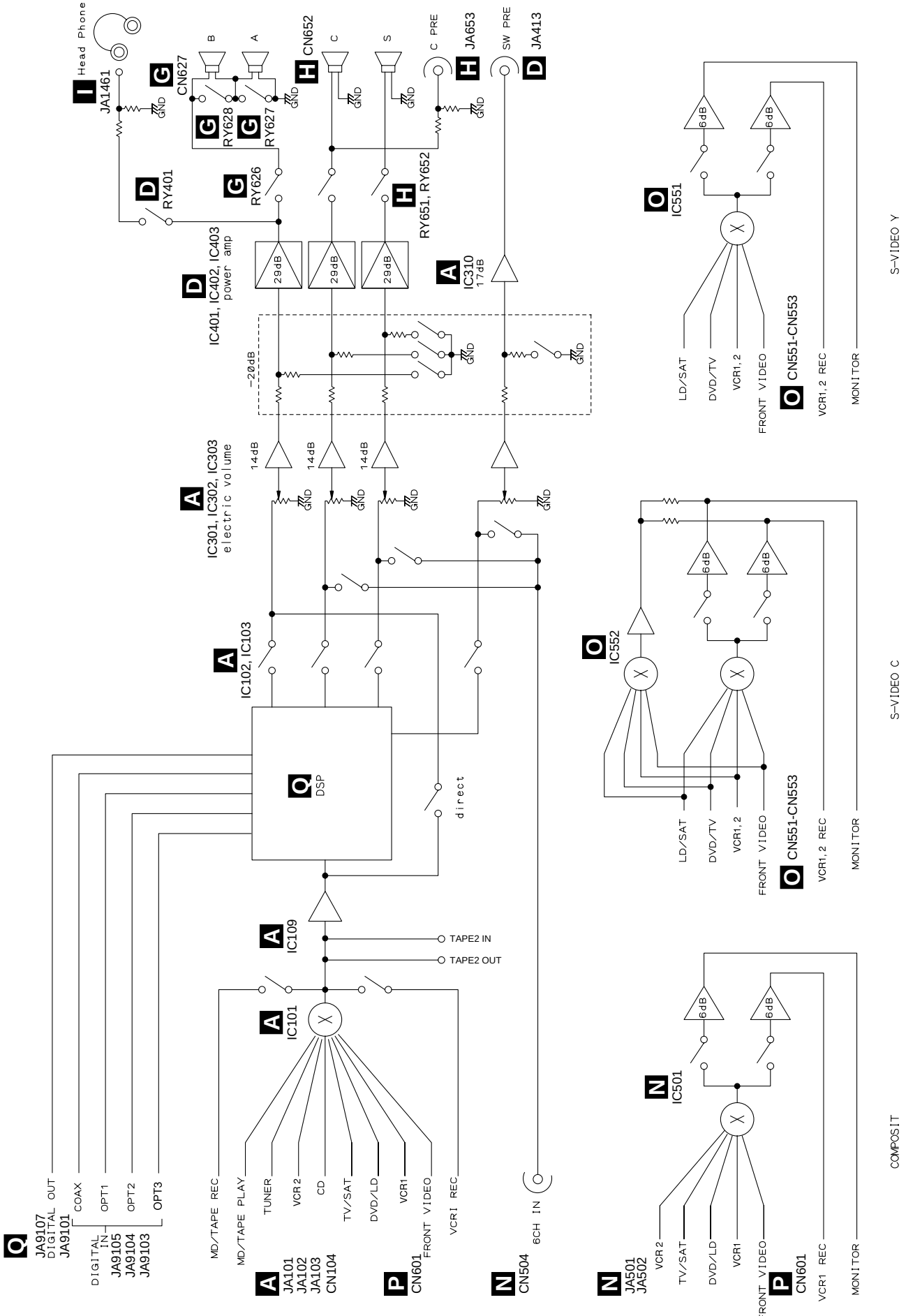


Rear View



Top View

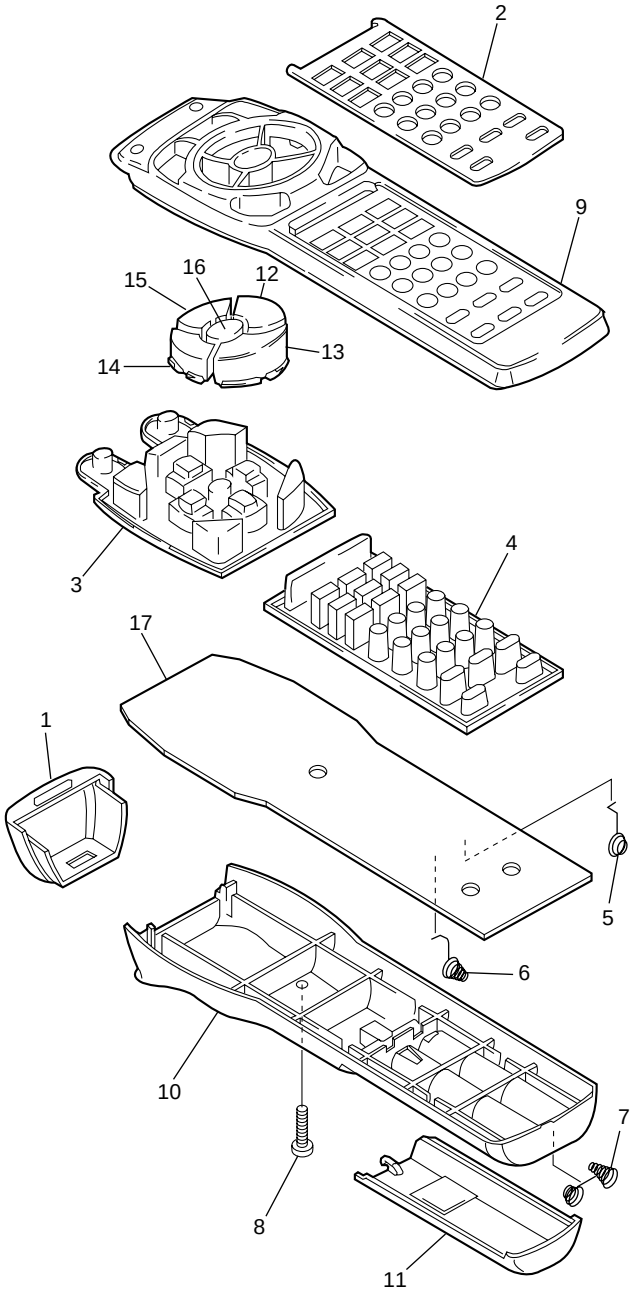
7.3 BLOCK DIAGRAM



7.4 REMOTE CONTROL UNIT [CU-VSX138 (AXD7178)]

7.4.1 Exploded Views and Parts List

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on the product are used for disassembly.*

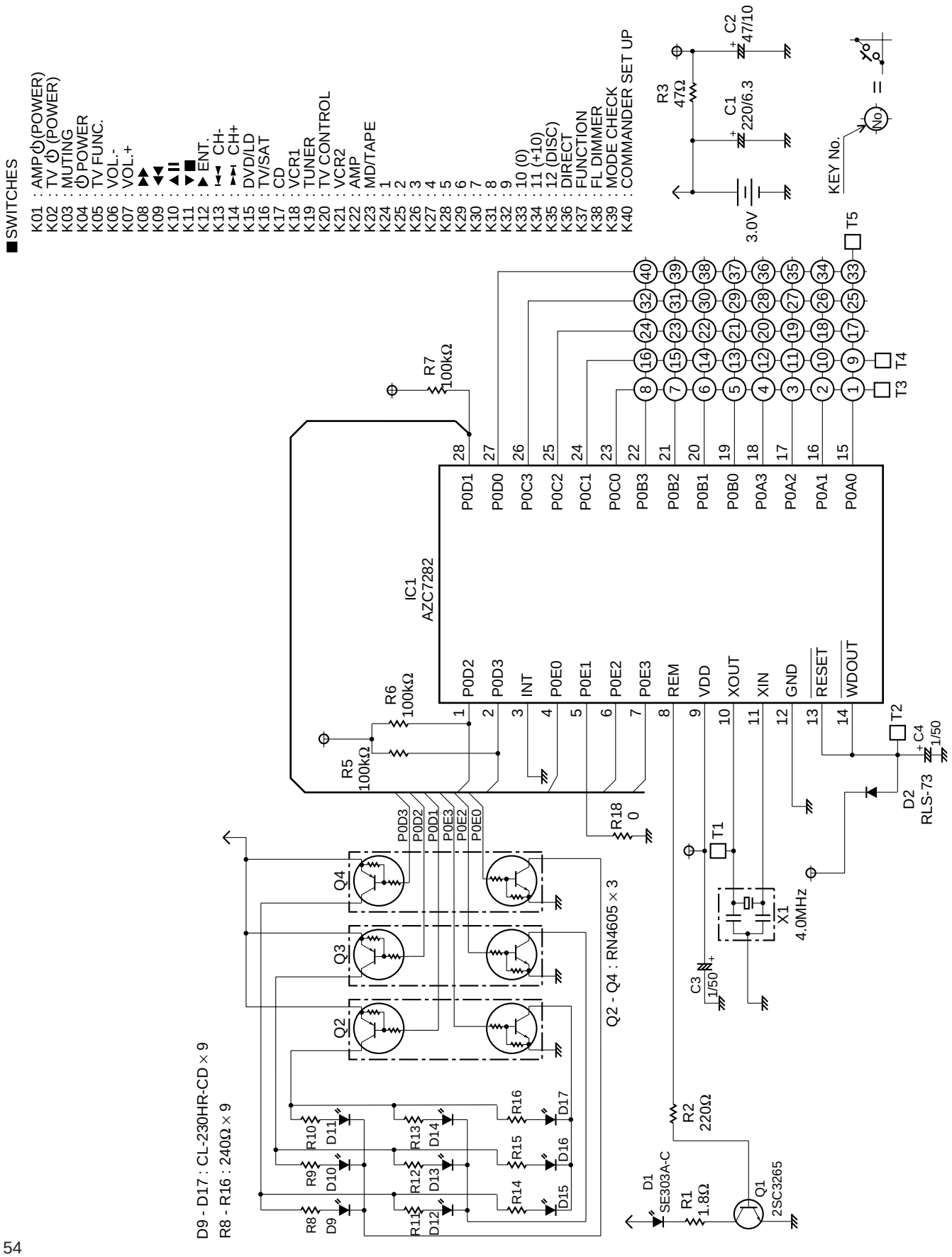


• Parts List

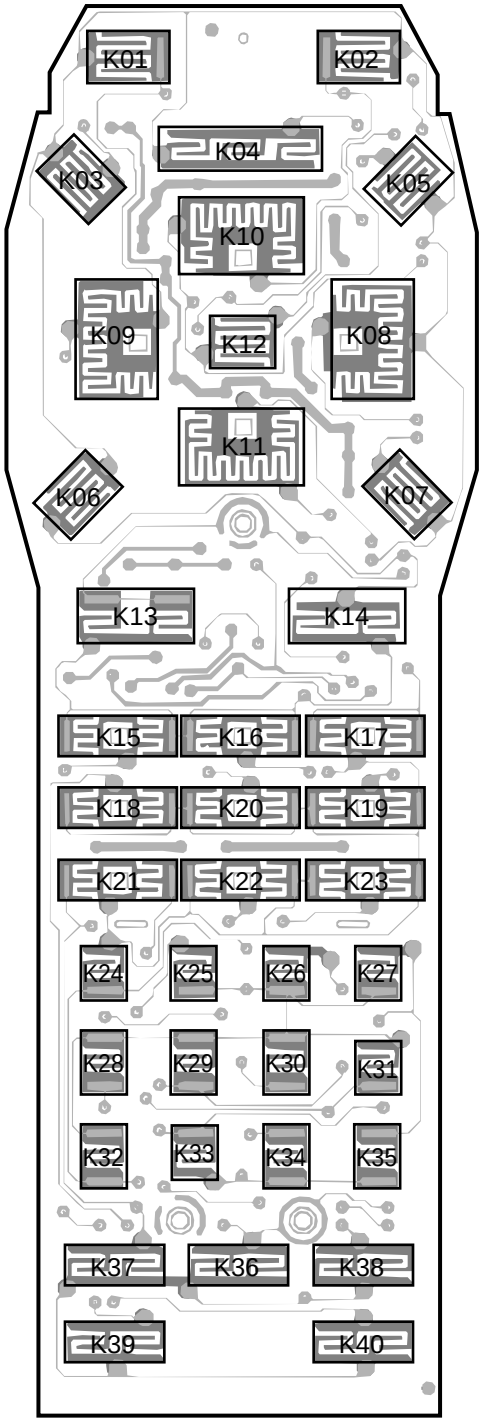
Mark	No.	Description	Part No.
	1	Filter	AZA7152
	2	Name Plate	AZA7304
	3	Rubber Sheet (A)	AZA7308
	4	Rubber Sheet (B)	AZA7307
	5	Spring (+)	AZB7049
	6	Spring (–)	AZB7050
	7	Spring	AZB7051
	8	Screw	AZB7052
	9	Remo-con Case (A)	AZN7738
	10	Remo-con Case (B)	AZN7326
	11	Battery Cover	AZN7327
	12	Main Key (FF)	AZN7666
	13	Main Key (STOP)	AZN7741
	14	Main Key (REV)	AZN7665
	15	Main Key (PAUSE)	AZN7742
	16	Main Key (PLAY)	AZN7664
NSP	17	PCB	AZW7248

7.4.2 Schematic Diagram

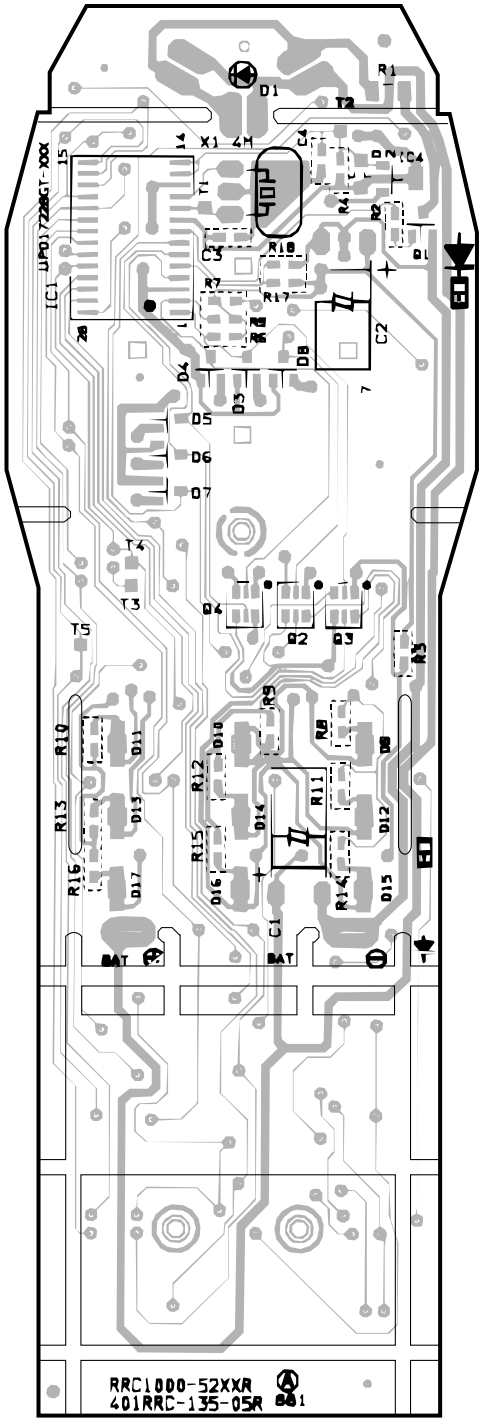
Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".



7.4.3 PCB Diagram



SIDE A



SIDE B

7.4.4 PCB Parts List

NOTES: ●*Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
●*The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
●*When ordering resistors, first convert resistance values into code form as shown in the following examples.*
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→	*56 × 10¹*	→	*561* ..... *RD1/4PU [5][6][1] J*
47k Ω	→	*47 × 10³*	→	*473* ..... *RD1/4PU [4][7][3] J*
0.5 Ω	→	*R50*		..... *RN2H [R][5][0] K*
1 Ω	→	*1R0*		..... *RS1P [1][R][0] K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

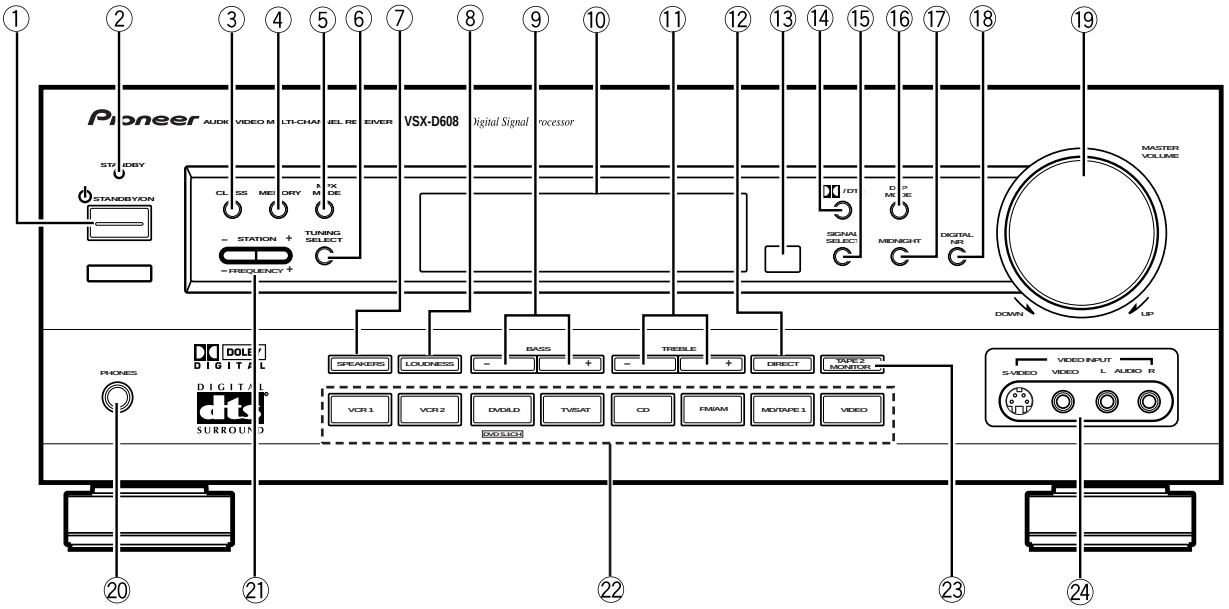
5.62k Ω	→	*562 × 10¹*	→	*5621* ..... *RN1/4PC [5][6][2][1] F*

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC1		AZC7282
	Q1		2SC3265
	Q2-Q4		RN4605
	D1		SE303A-C
	D2		RLS-73
	D9-D17		CL-230HR-CD
CAPACITORS			
	C2		CEAT470M10
	C1		CEAT221M6R3
	C3,C4		CEATR10M50
RESISTORS			
	R1		RS1/8S1R8J
	Other Resistors		RS1/10S□□□J
OTHERS			
	X1	CERAMIC RESONATOR (4MHz)	KBR-4.0M

8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

■ Front Section



① **⏻ STANDBY/ON button**
Press to switch the receiver on or put in standby.

② **STANDBY indicator**
Lights when the receiver is in standby mode. (Please note that this receiver consumes a small amount of power (2.5 W) during the standby mode.)

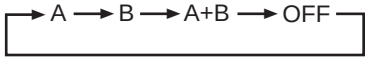
③ **CLASS button**
Press repeatedly to switch the preset station classes.

④ **MEMORY button**
Press to memorize a preset station.

⑤ **MPX MODE button**
Press to switch between auto stereo and monaural (“MONO”) reception of FM broadcasts. When the broadcast signal is weak, selecting “MONO” will improve the sound quality.

⑥ **TUNING SELECT button**
Press to switch between STATION and FREQUENCY.

⑦ **SPEAKERS button**
Press repeatedly to switch between A and B speaker systems as follows.



⑧ **LOUDNESS button**
Switches the loudness on or off. Use to raise the level of the low and high frequencies so they can be more easily heard when listening at low volumes.

⑨ **BASS (+/–) button**
Press to adjust low frequencies in the range of ±6.

⑩ **Display**

⑪ **TREBLE (+/–) button**
Used to adjust high frequencies in the range of ±6.

⑫ **DIRECT button**
Switches direct playback on or off. Use to bypass the receiver’s tone control circuitry or level control for higher fidelity to the program source. When DIRECT is ON, Dolby, DSP, LOUDNESS, DNR and MIDNIGHT mode are automatically turned OFF.

⑬ **Remote sensor**
Point the remote control toward the remote sensor to operate the receiver.

⑭ **/DTS button**
Press repeatedly to select the standard Dolby/DTS mode and the ADVANCED THEATER modes.

⑮ SIGNAL SELECT button

Use to select input signals for the digital components. First press DVD/LD, TV/SAT, MD/TAPE 1, CD or VCR 1 (㉒ Function buttons) to select the component, then press SIGNAL SELECT repeatedly to select one of the following:

ANALOG : Selects the analog (R and L) audio signals.
DIGITAL : Selects the digital audio signals. This receiver automatically detects and displays the format of the signal being input. AC-3 lights when Dolby Digital signals are input, and DTS lights when DTS signals are input. (AC-3 and DTS decoding is switched automatically.)

- SIGNAL SELECT is fixed in the “ANALOG” position for components not assigned to one of the four digital input jacks.
- Because the audio from a karaoke microphone and LD recorded with analog audio only is not output from the digital output, set SIGNAL SELECT to “ANALOG”.
- This receiver can only play back Dolby Digital and PCM (32kHz, 44kHz, and 48kHz), and DTS digital signal formats. With digital signal formats other than these, set SIGNAL SELECT to “ANALOG”.

⑯ DSP MODE button

Press repeatedly to select a DSP sound mode (HALL 1, HALL 2, JAZZ, DANCE, THEATER 1, or THEATER 2). Use these modes to produce surround sound from standard (two channel) stereo sources.

⑰ MIDNIGHT button

Press to hear effective surround sound at low volume levels. The effect is automatically adjusted according to the volume level.

⑱ DIGITAL NR button

Switches DIGITAL NR on or off. Use to reduce noise in digital audio sources.

⑲ MASTER VOLUME

After turning on the desired component, rotate to adjust the volume.

⑳ PHONES jack

Connect headphones for private listening (the speakers turn off automatically).

㉑ STATION/FREQUENCY (+/–) button

STATION: Press to select the preset channel.
FREQUENCY: Press to select the frequency.

㉒ Function buttons

Selects the function. Each press switches the DVD/LD input between DVD/LD and DVD 5.1 channel.

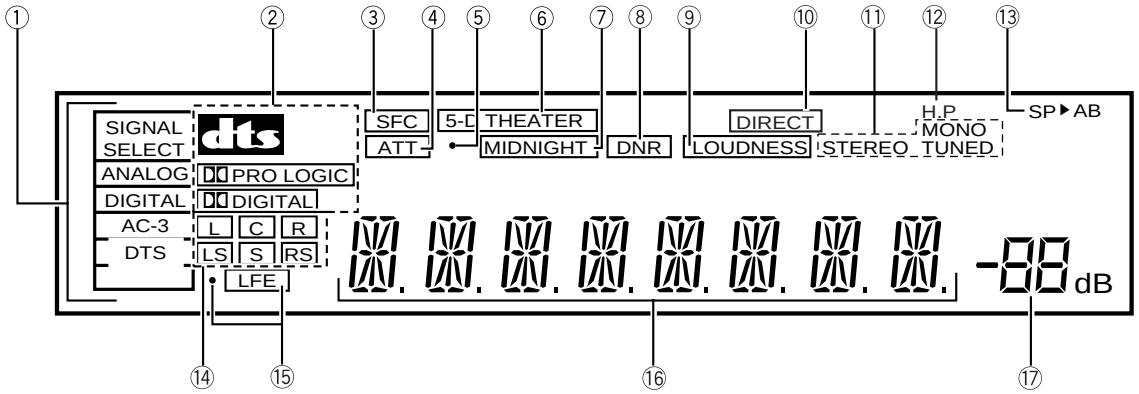
㉓ TAPE 2 MONITOR button

Switches the TAPE 2 monitor on or off.

㉔ VIDEO INPUT jacks

Connect a video camera, video game system, etc. to the VIDEO INPUT jacks.

■ Display



① SIGNAL SELECT indicators

Light to indicate the type of input signal selected for the current component (refer to “Front Panel” ⑮ SIGNAL SELECT).

ANALOG : Lights when the analog audio signals are selected.

DIGITAL : Lights when the digital audio signals are selected.

AC-3 : Lights when a source with Dolby Digital signals is played.

DTS : Lights when a source with DTS audio signals is played.

② Digital indicators

dts : Lights when DTS signals are input. (/DTS mode is ON)

PRO LOGIC : When the Dolby mode on the reciever is on, this indicator lights during 2 channel playback of Dolby Digital sources.

DIGITAL : When the Dolby mode on the reciever is on, this indicator lights to indicate playback of a Dolby Digital signal. However, PRO LOGIC lights during 2 channel playback of Dolby Digital.

③ SFC (DSP) mode indicator

Lights when the DSP mode or ADVANCED THEATER mode (exept for 5-D THEATER) is selected.

④ ATT indicator

Lights when ATT (refer to “Remote Control” ⑦ Number buttons) is used to reduce the level of the input signal. (Available in ANALOG mode only)

⑤ Overload indicator

When “ANALOG” is selected in SIGNAL SELECT, this indicator lights when an excessively strong signal is being processed . When this indicator lights, press ATT on the remote control to attenuate (lower) the signal and prevent distortion.

⑥ 5-D THEATER indicator

Lights when 5-D THEATER is selected.

⑦ MIDNIGHT indicator

Lights when the MIDNIGHT mode is on.

⑧ DNR indicator

Lights when the DIGITAL NR is on.

⑨ LOUDNESS indicator

Lights when loudness is on (refer to “Front Panel” ⑧ LOUDNESS).

⑩ DIRECT indicator

Lights when direct playback is on (refer to “Front Panel” ⑫ DIRECT).

⑪ Tuner indicators

STEREO : Lights when an FM stereo broadcast is received in the auto stereo mode.

TUNED : Lights when a broadcast is received.

MONO : Lights when the tuner is set to receive FM broadcasts in monaural.

⑫ H.P indicator

Lights when headphones are plugged in.

⑬ Speaker indicators

Light to indicate the current speaker system (refer to “Front Panel” ⑦ SPEAKERS (A/B)).

SP ► A : Lights when speaker system A is selected.

SP ► B : Lights when speaker system B is selected.

⑭ Program format indicators

The following indicators light to show the channels being played back.

L : Left front*1*2, **C :** Center*1, **R :** Right front*1*2,
LS : Left surround*1,**S :** Surround (mono)*2,
RS : Right surround*1

*1: Indicates 5.1ch Dolby Digital playback.

*2: Indicates Dolby surround playback.

⑮ LFE indicator

LFE (Low Frequency Effects) indicator lights to indicate that the program source contains an LFE channel. The indicator to the left of LFE lights during actual playback of the LFE signals (LFE signals are not present in all parts of the sound track).

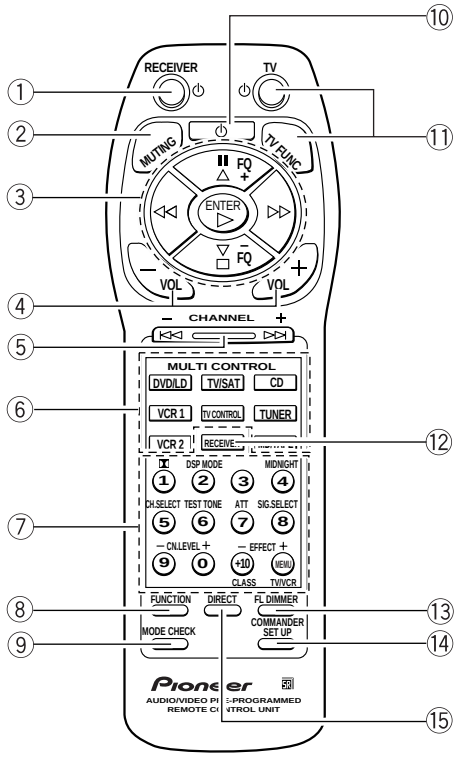
⑯ Character display

⑰ Volume level display

Displays the volume level. Volume level is maintained even when the power is off. ---dB indicates the minimum level, and 0dB indicates the maximum level.

- Depending on the level settings for individual channels, the MAX level can range between –10dB and 0dB.

■ Remote Control Unit



① RECEIVER button

Press to switch the receiver on or to put in standby.

② MUTING button

Press to mute the volume. “MUTING” appears in the display. Press again to cancel.

③ △/▽/◁/▷/ENTER buttons

Specific use of these buttons is described in conjunction with the operations they are used in.

ENTER : Press to switch the band (FM/AM) when using the tuner.

④ VOL (+/–) buttons

Press to adjust the volume. When VOL (+/–) buttons are pressed while muting, muting is canceled.

⑤ CHANNEL (+/–) button

Use to select preset stations when operating the tuner. When the remote is used to control other components, this button may be used to change channels, tracks, or chapters.

⑥ MULTI CONTROL buttons

Use these buttons to select the source and corresponding remote operation mode.

For example, pressing TUNER selects the built in tuner and sets the remote to operate the tuner functions.

⑦ Number buttons

These buttons can perform a variety of different functions depending on the remote operation mode.

• [RECEIVER operations (press RECEIVER first)]

DX : Press repeatedly to select the standard Dolby/DTS mode and the ADVANCED THEATER modes.

DSP MODE : Press repeatedly to select a DSP sound mode.

MIDNIGHT : Press to hear surround sound effectively at low volumes.

CH.SELECT : Use to select a speaker when adjusting speaker levels.

TEST TONE : Press to switch the test tone on or off when listening to a surround mode.

ATT : Press to attenuate (lower) the level of the input signals and prevent distortion (refer to “Display” ⑤ Overload indicator).

SIG.SELECT : When the same component uses both analog and digital connections, use to select input signals as digital or analog.

CH.LEVEL (–/+) : Use to adjust individual speaker levels.

EFFECT (+/–) : Use to adjust the DSP mode effect level.

• [TUNER operations (press TUNER first)]

Number buttons (0~9) : During preset tuning, use to input the number of the preset station. Use to input the station frequency during direct tuning.

CLASS (+10) : Press repeatedly to switch the preset station classes during preset tuning.

MENU : Press to activate direct tuning.

⑧ FUNCTION button

Press repeatedly to select a source.

⑨ MODE CHECK button

Press to confirm the current remote operation mode and to switch operation modes without changing the source .

⑩ Power button

Press to turn on or put in standby all connected components other than this unit.

⑪ TV/TV FUNC button

Press TV to turn the TV’s power on or put in standby. Press TV FUNC to select the TV for remote control operation.

⑫ RECEIVER button

Press to select the receiver for remote control operation.

⑬ FL DIMMER button

Press to adjust the brightness of the fluorescent display. Four levels of brightness ranging from very dim to very bright can be selected.

⑭ COMMANDER SET UP button

Use to customize the remote control functions.

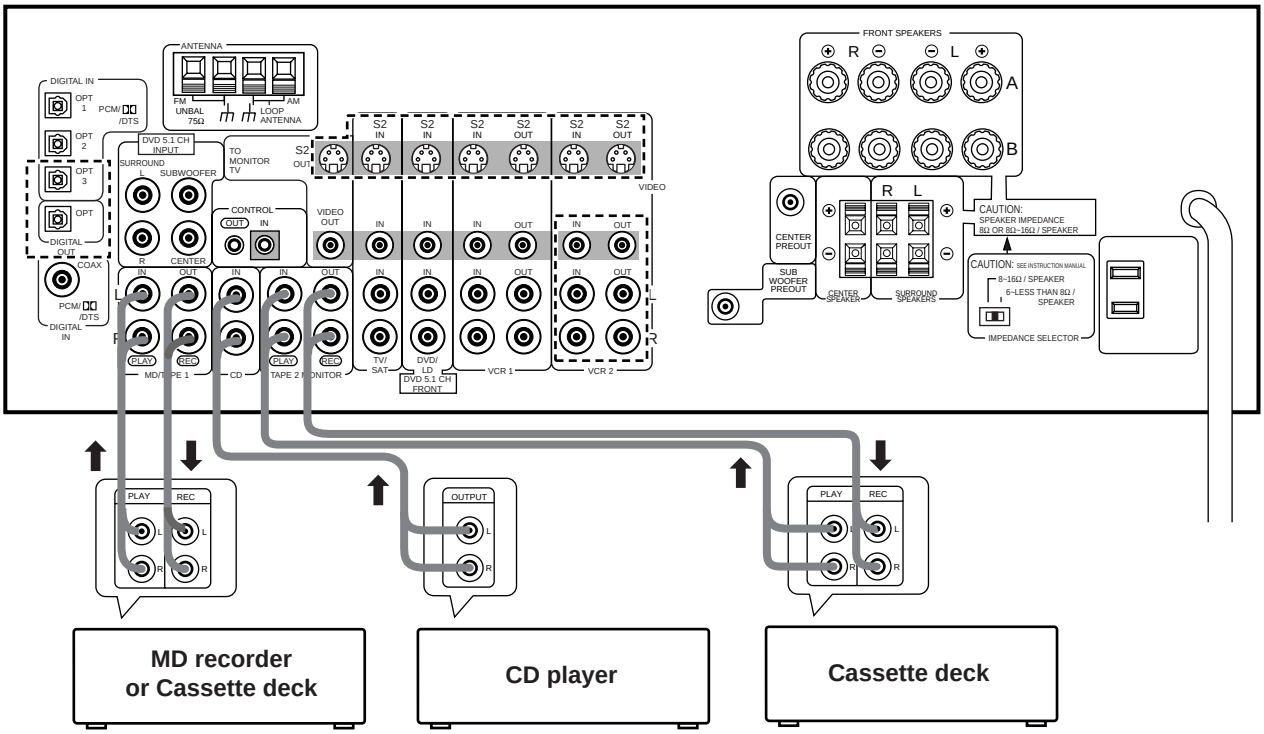
⑮ DIRECT button

Use to playback original source audio. When DIRECT is ON, Dolby, DSP, LOUDNESS, DNR and MIDNIGHT mode are automatically turned OFF.

■ Audio Components Connections

Be sure to switch power to standby and remove the power cord from the wall outlet when you make or change connections.

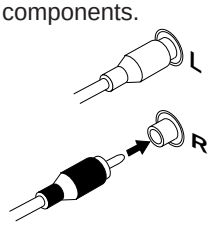
Connect your audio components as shown below.



*The arrows indicate the direction of the audio signal.

■ Audio cords

Use audio cords (not supplied) to connect the audio components.



Connect red plugs to R (right) and white plugs to L (left).
Be sure to insert completely.

Cassette Deck Installment

Depending on where the cassette deck is placed, noise may occur during playback of your cassette deck which is caused by leakage flux from the transformer in the receiver. If you experience noise, move the cassette deck farther away from the receiver.

8.2 SPECIFICATIONS

Amplifier Section

Continuous average power output of 100 watts* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.09 % total harmonic distortion (front).**

* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifiers.

** Measured by Audio Spectrum Analyzer.

Continuous Power Output
- Front ..... 100 W + 100 W (1 kHz, 0.8 %, 8 Ω)
- Center ..... 100 W (1 kHz, 0.8 %, 8 Ω)
- Rear ..... 100 W + 100 W (1 kHz, 0.8 %, 8 Ω)

Input (Sensitivity/Impedance)
- VCR 1, VCR 2, DVD/LD, TV/SAT, VIDEO, CD, MD/TAPE, TAPE 2 ..... 200 mV/47 kΩ

Frequency Response
- VCR 1, VCR 2, DVD/LD, TV/SAT, VIDEO, CD, MD/TAPE, TAPE 2 ..... 5 Hz to 100,000 Hz $^{+0}_{-3}$ dB

Output (Level/Impedance)
- VCR 1 REC, VCR 2 REC MD/TAPE REC, TAPE 2 REC ..... 200 mV/2.2 kΩ

Tone Control
- BASS ..... ± 6 dB (100 Hz)
- TREBLE ..... ± 6 dB (10 kHz)
- LOUDNESS ..... +7 dB/+6 dB (100 Hz/10 kHz)

Signal-to-Noise Ratio (IHF, short circuited, A network)
- VCR 1, VCR 2, DVD/LD, TV/SAT, VIDEO, CD, MD/TAPE, TAPE 2 ..... 97 dB

Signal-to-Noise Ratio [EIA, at 1 W (1 kHz)]
- VCR 1, VCR 2, DVD/LD, TV/SAT, VIDEO, CD, MD/TAPE, TAPE 2 ..... 80 dB

VIDEO Section

Input (Sensitivity/Impedance)
- VCR 1, VCR 2, DVD/LD, TV/SAT, VIDEO ..... 1 Vp-p/75 Ω

Output (Level/Impedance)
- VCR 1, VCR 2, MONITOR ..... 1 Vp-p/75 Ω

Frequency Response
- VCR 1, VCR 2, MONITOR ..... 5 Hz to 7 MHz $^{+0}_{-3}$ dB

Signal-to-Noise Ratio ..... 55 dB

Cross Talk ..... 55 dB

FM Tuner Section

Frequency Range ..... 87.5 MHz to 108 MHz

Usable Sensitivity ..... Mono: 13.2 dBf, IHF (1.3 µV/75 Ω)

50 dB Quieting Sensitivity ..... Mono: 20.2 dBf
Stereo: 38.6 dBf

Signal-to-Noise Ratio ..... Mono: 73 dB (at 85 dBf)
Stereo: 70 dB (at 85 dBf)

Distortion ..... Stereo: 0.5 % (1 kHz)

Alternate Channel Selectivity ..... 60 dB (400 kHz)

Stereo Separation ..... 40 dB (1 kHz)

Frequency Response ..... 30 Hz to 15 kHz (± 1) dB

Antenna Input ..... 75 Ω unbalanced

AM Tuner Section

Frequency Range ..... 531 kHz to 1,620 kHz (9 kHz step)
530 kHz to 1,700 kHz (10 kHz step)

Sensitivity (IHF, Loop antenna) ..... 350 µV/m

Selectivity ..... 25 dB

Signal-to-Noise Ratio ..... 50 dB

Antenna ..... Loop antenna

Miscellaneous

Power Requirement ..... AC 120 V, 60 Hz

Power Consumption ..... 280 W, 400 VA

Power Consumption in Standby mode ..... 2.5 W

AC Outlet
- SWITCHED ..... 100 W (0.8 A) MAX

Dimensions ..... 420 (W) × 158 (H) × 401 (D) mm
16-9/16 (W) × 6-1/4 (H) × 15-6/8 (D) in

Weight (without package) ..... 9.8 kg (21 lb 10 oz)

Furnished Parts

FM Antenna 1

AM Loop Antenna 1

Dry Cell Batteries (SIZE "AA" (IEC LR6)) 2

Remote Control Unit 1

Operating Instructions 1

Sub instruction manual [System Set up] 1

NOTE:

Specifications and the design are subject to possible modifications without notice, due to improvements.

Manufactured under license from Dolby Laboratories. "Dolby", "AC-3", "Pro Logic", " and double-D symbol are trademarks of Dolby Laboratories. Confidential Unpublished Works. © 1992 - 1997 Dolby Laboratories, Inc. All rights reserved.

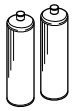
"DTS" and "DTS Digital Surround" are trademarks of Digital Theater Systems, Inc. Manufactured under licence from Digital Theater Systems, Inc.

■ Accessories

FM wire antenna (ADH7004)

AM loop antenna (ATB7009)

Remote control unit (CU-VSX138 : AXD7178)



"AA" IEC LR6 batteries × 2